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Perceptions of Healthcare Workers About Jamaica's Health Disaster Management Plan

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Abstract

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MPhil, Walden University, 2020

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of the Requirements for the Degree of

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Public Policy and Administration - Emergency Management

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Abstract

Disasters cause several barriers to the provision of healthcare services in Jamaica. These include damaged infrastructure, reduced access to medical care and supplies, increased demand for healthcare services, and physical and psychosocial impacts on healthcare workers. It is not known how effective the *Ministry of Health Procedures Manual No. 7, Disaster Management* is and how healthcare workers in Jamaica perceive the effectiveness of the plan. The purpose of this study was to explore how healthcare workers in Jamaica perceived the effectiveness of the plan. The procedures manual requires collective actions by healthcare workers to be implemented successfully, and therefore collective action theory was used as the study's foundation. The research questions were used to inquire about healthcare workers' perception of the use, effectiveness, revision, and experiences with the plan. The generic qualitative methodology was selected as the research design. Data collection was conducted electronically with 15 healthcare workers in Jamaica using a semistructured questionnaire. Data were analyzed using thematic analysis. The study results indicated the participants agreed that the plan was effective and the government should review the document and continue to use it. However, participants suggested that more emphasis be placed on training, orientation, the plan review process, and dissemination of the document. The study results may be used to enhance health disaster management planning in Jamaica. Improved health disaster planning will positively impact healthcare workers and those requesting healthcare services, resulting in positive social change.

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Dedication

This dissertation is dedicated to my remarkable, loving wife, Lucy, whom has provided ALL the support I needed to complete this journey. You have allowed me to face my greatest challenge with confidence. Our children Adrienne, Ahndre, and Ahndrea have inspired me to accomplish this dream. Shermaine, my sister and biggest fan; your encouragement was priceless. My grandmother, Myrtle Dorothy Walters, who nurtured me after I was orphaned at age 13.

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Chapter 1: Introduction to the Study

During the last 25 years, disasters have caused the loss of millions of lives and hundreds of billions of dollars in infrastructural and other losses around the world (Smith et al., 2018). Hurricanes Irma and Maria are examples of natural disasters that caused catastrophic damage and significant loss of lives in the Caribbean in the last 10 years (Dzau et al., 2018). The healthcare sector in Jamaica is particularly vulnerable to the impact of hurricanes. However, like in many other countries, this sector is expected to withstand the hazard and then provide normal healthcare services (Aarons, 2018). Although healthcare workers in Jamaica use a health disaster management plan to guide their response to hazards like hurricanes, the healthcare sector continues to experience significant devastation when a hurricane impacts the country. According to Blumenthal and Seervai (2018), the achievement of enhanced healthcare response to hurricanes requires investment in human capital, improvement in basic infrastructure, and systematic planning. All of these elements require financial resources.

Clients and patients should be able to access the highest quality healthcare services at all times. This requires that healthcare authorities implement measures to guarantee sustainability of those services during abnormal circumstances. One of the recommendations from the impact report following Hurricane Katrina in 2005 was that the healthcare sector in Louisiana needed more robust systems for planning and response to hurricanes and other hazards (Blumenthal & Seervai, 2018). As a result, healthcare sectors should implement the measures recommended following hurricanes and other

hazards in order to mitigate the negative impacts of hazards which may occur in the future.

In this study, I used the generic qualitative methodology to learn about the perceptions of healthcare workers in Jamaica regarding the effectiveness of the health disaster management plan. I used Ostrom's collective action theory to guide the process of this research. Participants for this study were healthcare workers in Jamaica who have experienced a hurricane or other health emergencies in the last 15 years and have relied on the health disaster management plan in their response. The results of this study may be used to inform health disaster management planning and reform processes in Jamaica and other countries in the Caribbean. In this chapter, I provide a background to the study, the problem statement, purpose, theoretical foundation, and research questions. The chapter includes the nature of the study, assumptions, significance to practice, theory and social change, and ends with a summary.

Background of the Study

Both natural and man-made hazards are unpredictable and can impact any place at any time causing moderate to catastrophic destruction. However, it is unrealistic to have a disaster management plan that addresses all aspects of any hazard. Kreisberg et al. (2016) explained that attention to emergency preparedness and planning is a fundamental element of healthcare facility operations planning. According to Kahn and Sachs (2018), healthcare institutions should be prepared for response to hazards at all times. Additionally, successful preparedness planning, response, and recovery require effective leadership skills, articulation of vision, and teamwork, which are all essential to the

process. If there is a hurricane or other hazard, previous preparedness planning enhances the possibility of continuity in the programs being implemented by the healthcare system or facility (Fox et al., 2018).

Kahn and Sachs (2018) outlined that healthcare leadership and management should aim to establish amicable relationships with healthcare stakeholders such as private hospitals, physicians, pharmacies, and businesses that provide medical supplies. Consequently, if there is a disaster, cooperation and collaboration from stakeholders will enhance the potential of the healthcare system to function effectively and provide the services required by the public. Additionally, cooperation from stakeholders will advance the recovery and rebuilding processes following a disaster, and therefore healthcare leadership and management should be creative in their approach to recovery in order to overcome some of the obstacles of rebuilding following a disaster (Kahn & Sachs, 2018). Moreover, Blumenthal and Seervai (2018) outlined that enhanced healthcare response to hurricanes requires investment in human capital through cooperation, collaboration, and extensive training.

Wind-induced disaster events have significant long-term impacts on physical structures in the healthcare sector such as hospitals, diagnostic centers, and pharmacies. For example, Hurricane Katrina in 2005 exposed weaknesses in the Louisiana healthcare system and highlighted the need for the United States government to harden the healthcare infrastructure against hazard impacts (DeSalvo, 2018). Equally important is the need for disaster management authorities to enhance response infrastructure so that healthcare workers can respond adequately to hurricanes and other hazards. In addition,

preparedness and response plans which address the long-term infrastructural needs of the healthcare sector following a hurricane or other hazard should be developed by healthcare administration (Marchigiani et al., 2013).

Health disaster management planning is an important factor in the implementation of cost-effective and sustainable healthcare services because the cost of providing healthcare services is escalating in many parts of the world. Clients and patients are demanding more from service providers and the healthcare system (Fox et al., 2018). Furthermore, healthcare professionals, clients, and patients should have confidence in the healthcare system, with the guarantee of high-quality services despite the prevailing circumstances. In addition, sustainability is critical because it is difficult to adopt reforms in the healthcare system following a disaster due to the level of political influences in discussion and decision-making. For example, Clark (2010) explained that healthcare reforms were not easily accomplished in Louisiana following Hurricane Katrina in 2005, because the persons negotiating the terms and conditions were of different political opinions and could not agree on the allocation of resources. Therefore, it is important to emphasize the need for predisaster planning for the healthcare sector to reduce some of the problems identified.

Healthcare staff and professionals encounter challenges following a hurricane which include lack of transportation, inadequate accommodation, damaged healthcare infrastructure, and insufficient equipment to perform their duties (Morris et al., 2016). Healthcare staff may become both victims and responders and it is therefore unrealistic to assume that all staff will be able to show up for work following a hurricane. However, it

is important to have adequate healthcare staff following a disaster to meet the needs of both the service providers and those requiring services. Nevertheless, healthcare workers are required to provide services using damaged infrastructure while they are faced with personal challenges. Consequently, these challenges can lead to lack of motivation and poor performance on the job and can subconsciously influence the way healthcare workers provide services to the public. For instance, Braine (2004) explained that several Caribbean countries including Jamaica were impacted by hurricanes in 2004 and these countries struggled to provide adequate healthcare services following the impacts of the hurricanes. This accentuated the importance of support from international agencies such as the Pan American Health Organization and the World Health Organization in circumstances where less developed countries are impacted by disasters (Braine, 2004).

The unexpected nature of disasters provides little opportunity for organized surveillance of both the affected and unaffected populations. However, various methods including approximation can be used to gather data before, during, and after a disaster event (Mongin et al., 2017). Furthermore, it is important to conduct epidemiological studies after disaster events so that disease patterns and impact can be identified and reported. In addition, health surveillance planning using publicly available data enhances the opportunities for the development of health strategies that can be used in response to disasters (Mongin et al., 2017).

Persons living with chronic illnesses such as diabetes, hypertension and cardio-vascular diseases become more vulnerable following a hurricane. Velez-Valle et al. (2016) explained that individuals diagnosed with Type II diabetes become particularly

vulnerable during and after a hurricane because of reduced availability of transportation and limited access to medication and other healthcare services. Nevertheless, all persons who have preexisting medical conditions become vulnerable following a disaster, but persons with Type II diabetes are at higher risk (Velez-Valle et al., 2016). As a result, it is especially important for healthcare providers to pay particular attention to planning for persons diagnosed with Type II diabetes and other chronic illnesses when they are conducting health disaster management planning.

Attention to emergency preparedness for special populations such as persons living with disabilities and the elderly is a critical element of healthcare facility operations planning. Inadequate planning for special populations can result in decreased levels of equitable healthcare services and reduced functioning of the healthcare system during disasters (Kreisberg et al., 2016). For example, whenever there is a disaster, the services required by special populations increase, but the healthcare system becomes stressed and is unable to meet the needs of those requesting the services. As a result, hospital and general healthcare preparedness planners should incorporate special populations in the health disaster management planning process, thereby promoting and supporting enhanced community resilience (Kreisberg et al., 2016).

Every year Jamaica is vulnerable to the impacts of hurricanes, and the country's healthcare sector is exposed to the devastation that can result from these storms. As a result, Jamaica's response to hurricanes should be guided by the use of health disaster management plans. While it was known that a health disaster management plan exists in Jamaica, it was not known how effective this plan was in response to hurricanes. It is also

not known how healthcare workers in Jamaica perceived the effectiveness of the health disaster management plan. Therefore, I examined the effectiveness of the use of the health disaster management plan in Jamaica, and in particular how healthcare workers perceived the effectiveness of the plan.

Problem Statement

There is new and increased disaster risk in many parts of the world arising from existing, new, and emerging social and economic processes such as climate change, environmental degradation, and poorly planned urban development. The increase in natural hazards such as hurricanes is impacting developing countries most seriously (Schipper et al., 2016; Strobl, 2012). Jamaica is a developing country located in the Caribbean and is vulnerable to the catastrophic impacts of hurricanes such as infrastructural losses, psychosocial impacts, reduction in the availability of regular healthcare services, injuries, and death. The official hurricane season begins on June 1 and ends on November 30 each year, although storms can form outside of this period. In 1989 the Government of Jamaica developed the *Ministry of Health Procedures Manual No. 7, Disaster Management*, which was revised in 2005 and updated in 2019. Healthcare workers in Jamaica are guided by this plan in their preparedness and response to hurricanes. The plan is also consulted by healthcare administrators in Jamaica when they make decisions about mitigation and risk reduction (Ministry of Health, 2019). However, healthcare workers need to be familiar with the contents of the health disaster management plan because this document contains pertinent information that will guide

the workers' response to emergencies. Consequently, the health disaster management plan should be tested regularly and updated periodically.

The general problem was that, following a hurricane, there were several barriers to the provision of healthcare services in Jamaica, which included damaged healthcare infrastructure, reduced access to medical supplies, increased demand for healthcare services, and physical and psychosocial impacts on healthcare workers. Likewise, healthcare workers in Jamaica were impacted by hurricanes like everyone else in the population, but were expected to continue working to provide the same level of healthcare services as they did before the hurricane. A specific problem existed in that it was not known how effective the health disaster management plan was and how healthcare workers in Jamaica perceived the effectiveness of the plan. In this study, I investigated how healthcare workers in Jamaica perceived the effectiveness of the existing health disaster management plan.

Purpose of the Study

The purpose of this generic qualitative study was to explore how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. Following a disaster, healthcare staff may be faced with many challenges, such as not being able to show up for work (Morris et al., 2016). Consequently, this will impact significantly the ability of healthcare institutions and facilities to provide adequate services to the population who may require more healthcare services than before the disaster.

Given that the healthcare sector in Jamaica is faced with the threat of hurricanes each year, it is important to have effective and up-to-date preparedness, response, and recovery plans. These plans will outline the steps required for response to hurricanes and other hazards, and will guide healthcare workers in the management of the processes before, during, and after a disaster. I collected qualitative data relating to healthcare workers' perceptions of the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I collected data for this study through the use of individual, semistructured interviews.

Research Questions

The primary research question that I used to guide this study was: How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?

1. I also addressed the following subquestions: How do healthcare workers in Jamaica describe using the health disaster management plan during emergencies?
2. How do healthcare workers in Jamaica perceive revisions to the health disaster management plan following emergencies?
3. What experiences have healthcare workers in Jamaica had that will either encourage or discourage their use of the health disaster management plan?

Theoretical Foundation

Theory is used to denote research tools that are used for several purposes including inquiry, assumptions, hypotheses, and propositions (Weible & Sabatier, 2018).

The theoretical research framework is defined as any observed or empirical theory or social processes that can be used to understand and explain related phenomena of interest (Anfara, 2008). In this study, I used Ostrom's collective action theory to guide the research process because the theory emphasizes that the outcomes which are expected by one person or group of people are dependent on the deliberate or involuntary actions or inactions and choices of other people and not only their direct actions and inactions (Weible & Sabatier, 2018). The theory suggests that there should be cooperation and collaboration between and among actors if the outcomes of actions are to produce the desired results. Furthermore, individual and group interests can be different and it takes cooperation and collaboration to ensure that the collective outcomes increase the benefits of all, and all actors achieve the greatest good.

I conducted this study among healthcare workers in Jamaica who were interviewed about their perspectives of the health disaster management plan. I used a qualitative methodology for data collection, and the collective action theory as the foundation for the study. The successful use of health disaster management plans requires the collective efforts of healthcare workers, stakeholders, and those who need healthcare services following a disaster. Therefore, I used the collective action theory, which focuses on collective actions between and among stakeholders, to assess how health disaster management plans require collective actions to be successfully implemented. I developed the research questions to focus on the health disaster management plan in Jamaica, and the perspectives of healthcare workers in Jamaica about the plan. Ostrom's collective action theory will be explained in more detail in Chapter 2 of this study.

Conceptual Framework

Qualitative research is used to focus on understanding situations, individuals, and groups, and obtaining in-depth appreciation of important moments and events (Rubin & Rubin, 2012). I conducted this research using the generic qualitative methodology (Percy et al., 2015). I carried out the data collection using individual interviews which aligned with the qualitative methodology and collected information from healthcare workers in the healthcare sector in Jamaica. I selected the participants in this study from healthcare workers who experienced a hurricane while working in the healthcare sector in Jamaica in the last 15 years and had used the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response.

In this study, I explored the use of the *Ministry of Health Procedures Manual No. 7, Disaster Management,* and how effective the plan was in addressing the preparedness, response, and recovery needs of Jamaica. I selected a generic qualitative design as the most appropriate for this research because I focused on the perceptions of healthcare workers in Jamaica about the effectiveness of the procedures manual. According to Setia (2017), the qualitative methodology is useful when exploring topics in detail and is particularly beneficial in social and behavioral research.

I collected data using individual face-to-face interviews, which were audio recorded using hand-held audio recorders. I transcribed the audio recordings manually. Next, I used thematic analysis to analyze the data for codes and themes that related to perspectives on the health disaster management plan in Jamaica. Following data analysis,

I generated and reported the findings and developed recommendations based on the conclusions.

Nature of the Study

Qualitative research is used to focus on understanding situations, individuals, and groups, and obtaining in-depth appreciation of important moments and events (Rubin & Rubin, 2012). I conducted this research using the generic qualitative methodology (Percy et al., 2015). I carried out the data collection process using individual interviews with healthcare workers in the healthcare sector in Jamaica. I selected the participants in this study from healthcare workers who experienced a hurricane while working in the healthcare sector in Jamaica in the last 15 years and had used the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response.

I explored the use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*, and how effective the plan was in addressing the preparedness, response, and recovery needs of Jamaica. I selected a generic qualitative design as the most appropriate for this research because I focused on the perceptions of healthcare workers in Jamaica about the effectiveness of the procedures manual. According to Setia (2017), the qualitative methodology is useful when exploring topics in detail, and is particularly beneficial in social and behavioral research.

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I generated and reported the findings and developed recommendations based on the conclusions.

Definitions

Contingency plans: Contingency plans are developed for specific events or hazards that can be anticipated. These plans are operationally oriented (Canton, 2007).

Disaster: A serious disruption of the functioning of a community or society due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to human, material, economic and environmental losses and impacts beyond the response capacity of the affected (Haddow et al., 2014).

Disaster management: The tactical organization, planning and application of measures and strategies preparing for, responding to, and recovering from disasters. Disaster management involves selecting the best approach based on the nature of the crisis (Canton, 2007).

Hazard: A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption, or environmental degradation (Haddow et al., 2014).

Healthcare worker: Any person employed in the healthcare sector and who receives payment for the services provided at a healthcare facility. These include but are not limited to clinicians, nurses, laboratorians, and administrative, janitorial, and cafeteria staff (Cheng et al., 2018).

Preparedness: The knowledge and capacities developed by governments, response and recovery organizations, communities, and individuals to effectively

anticipate, respond to, and recover from the impacts of imminent or current disasters. Preparedness is a state of readiness to respond to crisis, emergencies or disaster (Haddow et al., 2014).

Recovery: The process and stages of restoring livelihoods, health, as well as economic, physical, social, cultural, and environmental assets, systems, and activities, of a community or society affected by a disaster. Recovery aims to build back better to reduce future disaster risk (Phillips, 2015).

Response: Activities and actions taken before, during, or immediately after a disaster to save lives, protect property, and meet basic human needs. Response activities also reduce health impacts, and ensure the public safety of the affected population (Haddow et al., 2014).

Assumptions

Researchers' assumptions influence the study design and choices relating to study setting, sample strategies and population, and data collection and analysis (Helmich et al., 2015). At the start of a study, the researcher makes observations which lead to assumptions that will guide the research process. Therefore, assumptions are necessary so researchers will avoid redundant steps and procedures.

For this study, it was important to obtain participants who were knowledgeable about the contents and use of this plan in Jamaica so they could have provided informed responses to the research questions. I assumed that healthcare workers in Jamaica were knowledgeable about the contents and use of the *Ministry of Health Procedures Manual*

No. 7, Disaster Management and therefore would have been ideal candidates to provide information about the use and effectiveness of the plan.

Participants in this study provided information that informed the conclusions and recommendations. I assumed that participants were truthful about their experiences and use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*.

Scope

I conducted this study among healthcare workers in Jamaica who were required to use the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their preparedness and response to hazards and disasters, in particular hurricanes. As a result, the potential participants were healthcare workers in Jamaica who experienced a hurricane in the last 15 years and have been involved in the use of the health disaster management plan in their response. Moreover, I conducted the study in Jamaica because the country used an approved health disaster management plan and implemented the plan for response to hurricanes and other emergencies in the last 15 years.

Limitations

Limitations are areas of the study that can be considered as weaknesses which may produce challenges for the researcher. These areas of concern relate to design or conduct of the study and can impact the results (Munthe-Kaas et al., 2019). Accordingly, one of the challenges envisaged was the unwillingness of prospective research participants to be interviewed. Given that the participants were persons employed by the government of Jamaica, they may have had reservations about participating in research which required their opinion on the *Ministry of Health Procedures Manual No. 7,*

Disaster Management which is a government document. Therefore, I requested permission from the Ministry of Health in Jamaica to conduct the study and this was communicated to the participants in a written document. Additionally, I explained the interview processes and procedures to prospective participants and addressed issues such as sample selection, anonymity, confidentiality, privacy, and harm.

The cost associated with data collection could have posed a challenge since I was required to travel to Jamaica. For example, airfare, accommodations, and local transportation were costs related to data collection that I would have incurred. Therefore, I ensured that contingencies were in place to absorb any additional expenses. However, the travel restrictions associated with the global pandemic prevented me from travelling to Jamaica to conduct the interviews for this research. I collected the data using telephone and WhatsApp calls.

The process to obtain approval to conduct research interviews with government employees in Jamaica can be slow and time consuming. Consequently, I was cognizant that time was a factor and employed strategies to mitigate against delays that could have been encountered during the planning stages of the data collection process due to human and other interruptions. For example, I began the process to establish contact with the Ministry of Health in Jamaica very early in the dissertation process, and this compensated for any unforeseen delays. Additionally, the request for permission to conduct the data collection in Jamaica was submitted to the Ministry of Health in a timely manner which avoided unnecessary delays.

Delimitations

I decided to recruit healthcare workers who work in Jamaica for this qualitative research. Healthcare workers use the *Ministry of Health Procedures Manual No. 7, Disaster Management* to respond to emergencies and disasters. Therefore, healthcare workers should be able to provide informed responses to the research questions.

Healthcare workers in Jamaica use the *Ministry of Health Procedures Manual No. 7, Disaster Management* to respond to emergencies and disasters. The document was approved by the government in 1989 and was revised on several occasions. Jamaica is the only Caribbean country that has an approved and tested health disaster management plan. For this reason, I selected Jamaica as the most appropriate location to conduct this qualitative study.

Ravitch and Carl (2016) explained that it is possible to apply the results of qualitative studies to circumstances with similar contexts, and this is referred to as transferability. However, the process must be thoroughly described so the reader is provided with adequate details. I conducted this qualitative study among healthcare workers in Jamaica, and therefore it should apply to other Caribbean countries with similar healthcare systems.

Significance of the Study

Disasters present diverse challenges for healthcare workers and professionals as well as those who require healthcare services. Healthcare workers are challenged to provide increased healthcare services while facing personal adversities as a result of the phenomenon. Furthermore, the situation becomes more complicated by the numerous

infrastructural and other challenges that are presented following the disaster (Morris et al., 2016). Therefore, I explored the impact of hurricanes on the healthcare sector in Jamaica and evaluated how healthcare workers perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. The results of this study provided insights into the perspectives of healthcare workers about this plan which guided their operations in response to hurricanes and emergencies. Additionally, the insights provided by the healthcare workers may be used to inform the health disaster management plan review process in Jamaica. The information I obtained will be made available to emergency managers, policy-makers at the national level, and planners in the healthcare sector in Jamaica.

Significance to Practice

The results of this study may advance health disaster management planning and policy development in the healthcare sector in Jamaica and other islands in the Caribbean. Health disaster management policies are documents that can be used to guide healthcare planning processes. Therefore, improvements in health disaster management planning can provide a foundation for health disaster management policy development and reform. Additionally, health disaster management policies are used in the development of healthcare project documents which can be submitted to international funding agencies by the healthcare administration in Jamaica. These project documents focus on requests for funding as loans or grants for the development and improvement of the healthcare sector in Jamaica. Health disaster management planning-practice can be enhanced with improved knowledge and updated health disaster plans and policies.

Significance to Theory

I used Ostrom's collective action theory which emphasizes outcomes based on actions and inactions and choices of people (Weible & Sabatier, 2018). The results of this study can support enhanced health disaster management planning and provide supporting evidence that deficient planning is one of the causes of failed healthcare systems following a hurricane or emergency. Therefore, the results may support and strengthen the view that outcomes are dependent on deliberate or involuntary actions or inactions and choices of people (Weible & Sabatier, 2018).

Significance to Social Change

The results of this qualitative study may be used to enhance health disaster management planning, which will benefit the people of Jamaica. Health disaster management planning is important to the healthcare sector, since healthcare workers need to have formal guidance documents that can be used for preparedness, response, and recovery. Therefore, the use of health disaster management plans can transform the way healthcare workers in Jamaica approach their response to hurricanes and ultimately lead to enhanced delivery of services following a disaster.

According to Seyedin et al. (2011), training and careful planning are essential to preparing healthcare organizations for response to disasters. Furthermore, health disaster management planning enhances the ability of healthcare managers to operate under pressure in crisis situations, while making decisions that can reduce damage and losses in the healthcare sector. As a result, appropriate health disaster management planning can

benefit the healthcare sector and lead to enhanced social change with the delivery of increased and improved healthcare services following disasters.

The results of this study may be used to inform the health disaster management planning and revision processes in Jamaica and other countries in the Caribbean, since the results may be shared with healthcare managers in other Caribbean countries. Consequently, the results may be adapted by several countries, thus enhancing health disaster management planning in these countries which will lead to positive social change.

Summary

Health disaster management plans are critical for effective response to hurricanes and other hazards by healthcare workers in the Caribbean. Healthcare workers in Jamaica use the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response to hurricanes. I explored the perspectives of healthcare workers in Jamaica about the effectiveness of the health disaster management plan. The results may be used to improve the current plan.

In the next chapter I explore literature related to health disaster management planning and the use of health disaster management plans. In addition, I will investigate the effectiveness of the use of health disaster management plans in response to hurricanes and other hazards. Finally, I will examine perspectives about health disaster management planning based on previous experiences in the healthcare sector in Jamaica, the Caribbean, and other parts of the world.

Chapter 2: Literature Review

Hurricanes result in damaged healthcare infrastructure, reduced access to medical supplies, increased demand for healthcare services, and physical and psychosocial impacts on healthcare workers (Nash, 2015). These are some of the barriers to healthcare in Jamaica following a hurricane. While hurricanes affect the entire population in Jamaica, healthcare workers are expected to continue working to provide the same level of healthcare services as they did before the hurricane (Rutkow et al., 2017). As a result, it is important for healthcare workers in Jamaica to be familiar with the health disaster management plan and to be prepared to respond to emergencies and disasters. However, it was not known how effective the health disaster management plan was and how healthcare workers in Jamaica perceived the effectiveness of the plan. In this study, I investigated how healthcare workers in Jamaica perceived the effectiveness of the existing *Ministry of Health Procedures Manual No. 7, Disaster Management*.

The healthcare sector in Jamaica needs to have effective and up-to-date preparedness, response, and recovery plans that will guide healthcare workers in the management of the processes before, during, and after a disaster. Given that the healthcare sector in Jamaica is exposed to hurricanes and other hazards each year, challenges resulting from limited human and financial resources and damaged infrastructure can be anticipated. Healthcare staff may also be faced with personal challenges that may prevent them from being able to provide optimum services when there is an emergency or disaster (Quevillon et al., 2016). In this qualitative study, I

explored how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*.

In this chapter, I provide the theoretical foundation which is the collective action theory. I also provide a detailed literature review which focuses on the benefits and significance of the health disaster management plan. In addition, I present an outline of the *Ministry of Health Procedures Manual No. 7, Disaster Management* along with sections on continuity of operations, training, special populations, and security.

Literature Search Strategy

To identify literature for this review I conducted extensive searches of databases related to health sciences. The Walden University library was the main source of data, and I conducted searches to identify peer-reviewed journal articles, dissertations, scholarly publications and research reports. The main databases I consulted included EBSCOHost discovery service, CINAHL & MEDLINE Combined Search, and Google Scholar. The key words I used in the literature search included h*ealth disaster plan, disaster preparedness plans, healthcare, business continuity, benefits of healthcare planning, collective action theory, healthcare workers, disaster, emergency,* and *healthcare plans.*

Theoretical Foundation

I applied a generic qualitative approach using Ostrom's collective action theory to examine the perspectives of healthcare workers in Jamaica about the use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. Collective action theory originated from Mancur Olson in 1965 (Ostrom, 2000) and emphasizes that public goods

and services that are produced through collective action of a group will be for the benefit of the entire society and that no one can be exempted (Degli Antoni, 2016). Collective action creates the condition for actors to make choices for others that will benefit them in ways they are not able to refuse (Buchanan & Yoon, 2012). In this study, I examined the use of the health disaster management plan in Jamaica which required collective action by healthcare workers for the benefit of the population.

Forsyth and Johnson (2014) explained that Ostrom's work focused on collective action for economic gain in which the production of public goods is featured. When public goods are produced through collective action, the benefits derived are for everyone. Since the goods are for public consumption, it becomes difficult to exclude members of the population from participating in the benefits (Forsyth & Johnson, 2014).

Individuals make assumptions about the perceived costs and benefits of their actions toward social outcomes of collective action before participating in the activity (Forsyth & Johnson, 2014). Even if the individual's participation produces benefits it will contribute to the total outcome. Ostrom advanced shared behavior through rational choice within communities. Ostrom also indicated that groups can participate in collective action by having an individual represent their rational choice at an event (Forsyth & Johnson, 2014).

According to Woods and Bowman (2018), collective action is inspired by the desire to produce collective benefits through combined actions undertaken by many individuals. The ideal conditions for collective action exist when the transaction cost is outweighed by the benefits of the intended collaboration to the projected population

(Woods & Bowman, 2018). The success of collective action depends on the motives of individuals and the benefits that can be derived, and therefore participants remain committed based on the projected value for everyone (Woods & Bowman, 2018).

Collective action theory focused on natural resources management and coordination of agricultural production and marketing (Faysse & Ben Mustapha, 2017). Ostrom advanced collective action theory but indicated there have been challenges with the intentions of individuals within the group undertaking the collective action. Forsyth and Johnson (2014) outlined that individuals will only participate in collective action if they perceive their actions will produce future benefits for themselves.

Fernando Medina (2013) discussed collective action theory and how it has advanced to the stage where it is accepted that large-scale participation is possible without proposed incentives. Although previous writers were concerned about individuals in the collective action process, research on the theory has advanced to prove that collective action is possible. However, there are questions about what makes collective action happen, how it is sustained, and the variables that affect its survival (Fernando Medina, 2013).

Theorists who advanced perspectives of collective action proposed that groups should be small in order to achieve their goals. In contrast it was also proposed that large groups either needed to be coerced or offered special incentives in order for the members to act in the common interest of everyone (Degli Antoni, 2016). However, in both small and large group settings, the individual should be assured that their contribution adds to the value of the common good that is being produced for the consumption of everyone.

According to Percoco (2016), collective action theory was successfully implemented in Italy when the government introduced the use of strategic plans among Italian cities. Specific strategic plans were developed for each city with the common goal of achieving sustainable development for Italy. Percoco (2016) highlighted that the strategic plans were advanced and implemented with the input and involvement of individuals, groups, and entities from every sector of the society. As a result, group initiative and the shared belief of being part of a larger entity were two key prerequisites for the successful implementation of collective action in Italy (Percoco, 2016).

The traditional implementation of collective action theory required face-to-face interaction and group exchanges, but with advances in technology, the online platform has become a new and innovative option for these relations. Individuals, groups, and entities, can now cooperate and collaborate in an online environment using collective action theory. According to Lai and Katz (2016), people are now more inclined to cooperate through online associations, so voluntary organizations are finding it more effective to use the online platform through collective action to enhance volunteerism. However, Lai and Katz (2016) considered the mixed-mode model where collective action is used to integrate the online and face-to-face groups. Both modalities have their benefits, advantages, and disadvantages, but collective action serves to enhance their functions (Lai & Katz, 2016).

The success of collective action theory in Italy depended on the actions of individuals, groups, and entities at every level of the society (Percoco, 2016). The use of collective action theory in the online environment for the success of voluntary

organizations depended on the collective input of people in diverse locations but with one common purpose (Lai & Katz, 2016). Similarly, collective action theory can be used by the healthcare sector in Jamaica to implement the *Ministry of Health Procedures Manual No. 7, Disaster Management* successfully.

According to Faysse and Ben Mustapha (2017), the foundation of collective action theory is built on natural resources management and agricultural production, which both require combined efforts for them to be successful. Similarly, the successful implementation of the components of the *Ministry of Health Procedures Manual No. 7, Disaster Management* requires collective action from individuals across the healthcare sector in Jamaica during an emergency. The plan outlines the steps to be taken by several departments in the healthcare sector in Jamaica during an emergency, and each division must contribute to the collective actions for the plan to be executed effectively (Ministry of Health, 2019). Therefore, implementation of the *Ministry of Health Procedures Manual No. 7, Disaster Management* relates directly to collective action theory since the plan requires collective action from several persons and entities in the healthcare sector.

I used the research question to explore how healthcare workers in Jamaica perceived the effectiveness of the health disaster management plan which guides the healthcare response to hurricanes and other emergencies. The responses to the research question were provided by healthcare workers in the healthcare sector in Jamaica who had experienced a hurricane in the last 15 years and had also used the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response to the hazard. These healthcare workers in the healthcare sector in Jamaica had all taken individual actions in

the implementation of the health disaster management plan, but their individual actions added to the collective actions required to successfully implement the strategic document. Therefore, collective action theory was applied to the collective actions necessary for the implementation of the *Ministry of Health Procedures Manual No. 7, Disaster Management*.

Literature Review

In the following section, I explore literature on health disaster management and the use of health disaster management plans. Some of the topics listed are health disaster management plans, continuity of operations, and the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I also focus on effects of disasters on healthcare workers, revision of health disaster management plans, special populations, community resilience, and training.

Health Disaster Management Plans

The Caribbean comprises several small islands bordered by the Atlantic Ocean and the Caribbean Sea and these countries are exposed to both natural and man-induced hazards. According to Ugarte et al. (2018), the capacity to respond to natural and man-induced hazards was highlighted as a weakness in Caribbean countries in the 1970's. As a result, a request was made by the Ministries of Health in the Caribbean countries to the Pan American Health Organization for assistance to enhance healthcare preparedness and response capabilities (Ugarte et al., 2018). This request was made because most of the countries of the Caribbean had no dedicated personnel or plans for healthcare disaster response. In response to the request, the Pan American Health Organization collaborated

with the Caribbean countries to establish the Emergency Preparedness and Disaster Relief Coordination program in 1976 for the purpose of addressing healthcare emergencies and disasters (Ugarte et al., 2018). The Caribbean countries then embarked on a program to enhance healthcare disaster management planning.

The ministries of health in the Caribbean countries created national healthcare risk management systems, and collaborated to develop national and regional plans to address disaster management deficiencies that were identified in the healthcare systems. Ugarte et al. (2018) outlined that some of the new measures that were adopted included the appointment of health disaster coordinators, creation of emergencies and disaster programs, updating hospital building codes, and the launch of a Safe Hospitals initiative. In spite of the establishment of these programs and initiatives, preparedness and response capacities among Caribbean countries varied because of the unique circumstances of each country's population, size, economy, and governance structure. However, the ministries of health of the Caribbean countries have established that between 2016 and 2021 they want to focus on strengthening capacities toward large-scale healthcare emergency management which requires comprehensive healthcare emergency plans (Ugarte et al., 2018).

Both natural and man-induced disasters cause destruction of infrastructure, injury, deaths, and interruption to healthcare delivery (Nash, 2015). Healthcare preparedness is an essential element of any country's national response to a disaster. As such, preparedness and response should be guided by drills, simulations, exercises, and operational plans. A health disaster preparedness plan outlines the procedures and

guidelines to be followed by a healthcare entity in the event of an emergency or disaster (Demming, 2016). Some of the main elements of the health disaster management plan include preparedness, response, current assets, communication, evacuation, security, and recovery (Demming, 2016). Therefore, a heath disaster management plan should provide the foundation for a healthcare entity's disaster response program which should be structured to ensure public safety.

Preparedness planning consists of actions taken in anticipation of an event so that entities can respond adequately, and recover from the effects of the incident (Paganini et al., 2016). Consequently, emergency workers should be aware of existing disaster plans, and should be sufficiently familiar with the contents of these plans so they can follow the procedures effectively during response to a hazard. A study carried out among physicians at emergency departments at hospitals in Italy revealed that as many as 55% of those interviewed did not know what the disaster management plan was, 67% did not know where to locate a hard copy of the plan, and 59% did not know whose responsibility it was to activate the plan (Paganini et al., 2016).

Continuity of Operations

The terms *disaster management plan* and *business continuity plan* are sometimes used synonymously but refer to separate documents. A disaster management plan outlines how an organization responds to and recovers from a disaster, and the operating procedures and guidelines for its various departments (Seyedin et al., 2011). In contrast, continuity planning refers to a plan of action to prepare an organization to respond to

sudden changes and to be able to continue operations from its current location or an alternate place with as few disruptions as possible (Seyedin et al., 2011).

The healthcare sector provides health services to the population that are necessary before, during, and following a disaster. A disaster management plan is used to prepare the healthcare sector to respond to an emergency or disaster, while a business continuity plan is used to prepare the sector to resume operations in alternate locations with alternate facilities in the event of shock caused by unexpected hazard events. For example, the health sector in British Columbia, Canada, implemented an online business continuity management tool which enhanced its situational awareness, response and planning processes, and the generation of reports (Mackinnon & Pinette, 2016). The online tool was used for data collection, management, and maintenance, and provided a foundation for continuity of operations in the event of failures in the healthcare system.

Moore and Bone (2017) described a business triage methodology which is used to model business continuity planning. Triage is the process whereby patients are categorized based on their medical condition so that medical response personnel can provide appropriate treatment to those needing it most, therefore using the limited available resources most efficiently (Sherafat et al., 2019). Triage enhances trauma management and is essential to ensure prioritization of injured patients so that timely assessments can be done to provide treatment that will reduce morbidity and mortality (Lampi et al., 2018).

According to Moore and Bone (2017), business continuity planning can be modeled after the concept of triage. For instance, whenever there is an adverse event that

impacts an entity or business negatively, management should conduct a prioritization process to determine which functions are most critical for resumption of operations, and address those functions before others. Consequently, key functions of the business will be given priority and resumption will enable the business to provide priority services to the public (Moore & Bone, 2017).

While business continuity planning is a viable option for the healthcare sector, health disaster plans are more practical for preparedness and response in the sector. Health disaster management plans are used to establish procedures for response to both natural and man-induced hazards, and also includes steps to recovery (Paganini et al., 2016). As a result, it is required that hospitals and other healthcare facilities use health disaster management plans in their operations in response to emergencies and disasters (Paganini et al., 2016). The Jamaica healthcare sector uses the *Ministry of Health Procedures Manual No. 7, Disaster Management* as the guide for preparedness and response to emergencies and disasters.

The Ministry of Health Procedures Manual No. 7, Disaster Management

The healthcare administration in Jamaica developed the *Ministry of Health Procedures Manual No. 7, Disaster Management* (2019) which is used to guide the country's response to health emergencies and disasters. The main chapters of the document are:

- Chapter 1: Disaster Planning
- Chapter 2: Disaster Management Committee
- Chapter 3: Disaster Management Executive

- Chapter 4: Roles and Functions of Key Persons
- Chapter 5: Control of Transport

In Chapter 1 of the *Ministry of Health Procedures Manual No. 7, Disaster Management* an introduction to the plan along with the purpose of the document which is to outline the procedures and guidelines to ensure planned response to emergencies and disasters is provided. The chapter also provided the objectives of the plan which outlined coordination, safety, relationship with the National Disaster Council, and relationship with local, regional, international, and voluntary agencies. Chapter 1 concluded with an explanation of the delegation of authority for general expenditure before and after the disaster.

Chapter 2 of the plan outlined the Terms of Reference for the Jamaica Ministry of Health Disaster Management Committee which emphasized that the plan and the Standard Operating Procedures should be updated at least annually. Additionally, the Terms of Reference highlighted prevention, mitigation, preparedness, response and recovery at all levels and that health personnel should know and understand the plan and Standard Operating Procedures for health emergency and disaster management. The plan also stated that the Jamaica Ministry of Health should maintain close collaboration and cooperation with the Office of Disaster Preparedness and Emergency Management (ODPEM) at all times. Further, Chapter 2 outlined the functions of the Jamaica Ministry of Health Disaster Management Committee and the action plans for pre and post disaster. The chapter concluded with a detailed outline of the functions of the Jamaica Ministry of Health emergency operations center.

The third chapter of the plan provided the Terms of Reference for the Jamaica Ministry of Health Disaster Management Executive. The Terms of Reference outlined that the executive is responsible for the development and implementation of policies, legislation, programs and plans to ensure effective disaster management and to promote a culture of emergency and disaster management in the health sector. Additionally, the Terms of Reference outlined issues of disaster readiness, activation and deactivation of the Ministry of Health disaster plans and emergency operations center, and the availability of resources for the proper functioning of the Jamaica health sector response to an emergency. The chapter also provided details of the composition of the Jamaica Ministry of Health Disaster Management Executive.

Chapter 4 outlined the functions and responsibilities of specific officers in the healthcare sector who have duties to lead the emergency response processes. These officers or their designees are expected to meet during emergencies and represent their specific departments in the planning and response to the event. The list of officers is as follows:

- The Permanent Secretary
- Chief Medical Officer
- Health Disaster Coordinator
- Director of Health Services Planning
- Director of Health Promotion and Protection
- Director of Standards and Regulations
- Medical Epidemiologist

- Director of Environmental Health
- Director of Nutrition
- Chief Nursing Officer
- Director of Pharmaceutical Services
- Director of Personnel
- Director of General Administration
- Director of Health Promotion and Education
- Principal Financial Officer
- Transport Officer

The fifth chapter of the document provided details about the control of transportation during a healthcare emergency or disaster. The chapter outlined that transport is needed for the movement of healthcare workers, transfer of patients, collection and distribution of equipment, pharmaceuticals and medical supplies, and the movement of personnel to conduct surveillance. At the Ministry of Health headquarters, the director of transport and security manages the transport function and at the regional and parish levels, other officers are given responsibility for those functions. The chapter concluded with information about responsibilities for air and sea transportation.

The final section of the document outlined the standard operating procedures for the Jamaica Ministry of Health emergency operations centers. The document provided details about the management of the emergency operations centers at the national, regional and parish levels. Additionally, the document outlined the management of power and water supply, arrangements for the relocation of the emergency operations centers,

and the actions which should be taken at the various stages and phases of the disaster management cycle.

Benefits of Health Disaster Management Plans

Natural and technological hazards are becoming more frequent and more intense, and it is impossible to prevent them. These hazards can impact populated areas and cause extensive and catastrophic destruction and disruption of normal functions in the society. When this occurs and the authorities are unable to respond adequately, and require assistance from other jurisdictions, a disaster is declared (Francescutti et al., 2017). Since hazards and disasters cause disruptions to normal societal functions including those in the healthcare sector, it is imperative that healthcare workers develop robust health disaster management plans in response.

Research indicates that there is a correlation between climate change and the increase and intensity of hazards (Nagy et al., 2018; Smith et al., 2017). Although there are aggressive measures being undertaken to mitigate the effects of climate change, the impacts are expected to persist and increase. Actions to prevent and reverse the catastrophic impacts of climate change are required, and should be the focus of disaster planning. Smith et al. (2017) outlined that health is sensitive to climate variations and existing health problems will be intensified especially among vulnerable populations with poor health and high levels of poverty. On the contrary, it is not anticipated that the emergence of new health disorders will be significantly influenced by climate variations (Smith et al., 2017). Given that the healthcare sector will be impacted by climate change and variation, there is need for immediate improvements in health disaster preparedness

and planning and enhanced capacity for disaster response among healthcare workers.

Training

The impact of disasters on healthcare facilities can be very costly and can also create significant challenges for patients, physicians, staff, and first responders. Healthcare organizations should be prepared to ensure the safety of their patients including evacuations and transfers while managing resources and human capital for effective response (Francescutti et al., 2017). While disasters are expected to cause catastrophic damage, they can also be uniquely intense and have peculiar features such as extremely high levels of rainfall and extra high gusts of wind. Therefore, it is appropriate for healthcare managers to be adequately trained to respond to emergencies, and to be able to manage limited resources for such situations.

Healthcare workers should be trained to manage healthcare emergencies where the hazards present varying features. However, it is difficult to use table-top exercises and simulations to train healthcare workers adequately, since an exercise is different from reality. Francescutti et al. (2017) suggested that one of the most appropriate ways to prepare for health disasters is to learn from past experiences, but in many cases these are not properly documented or communicated.

Public health emergencies require sophisticated, coordinated responses from several entities. Because these events are rare it is difficult to document the effectiveness of the response system before the event (Savoia et al., 2014). Exercises are an essential component of any preparedness program and are used as tools to measure current state of preparedness of healthcare systems (Savoia et al., 2014). According to Haddow et al.

(2014), the main types of exercises used to test preparedness are drills, tabletop exercises, functional exercises, and full-scale exercises.

A drill is a controlled method in which a single disaster management function is practiced (Haddow et al., 2014). A tabletop exercise is designed for officials to practice components of a disaster plan in a controlled environment (Haddow et al., 2014). The functional exercise uses a single event to test several response capabilities in order to fulfil one main response objective (Haddow et al., 2014). A full-scale exercise is similar to a functional exercise, but it mimics a real event using players and done in real time (Haddow et al., 2014).

Evidence-based decision making in disaster management requires effective knowledge translation to turn research knowledge into action. The Canadian Institute of Health Research has proposed the Knowledge-to-Action process which begins with identification of the problem and continue through monitoring and evaluation of the implementation of pertinent knowledge and solutions (Généreux et al., 2019). The knowledge that informs the disaster reduction strategies can be community-based or indigenous which can provide contextual information that is not available in science-based sources.

Although Canada has reported significant knowledge generation from recent disasters, the challenges of being able to improve knowledge through research before, during, and after disasters remains. Additionally, the concern of not being able to effectively disseminate new and existing knowledge continues to be a challenge.

Généreux et al. (2019) listed the following six strategies as success points for the Knowledge-to-Action process which requires effective disaster management planning:

- Blending the best of traditional and modern approaches
- Fostering community engagement
- Cultivating relationships
- Investing in preparedness and recovery
- Putting knowledge into practice
- Ensuring sufficient human and financial resources

The African Regional Office of the World Health Organization proposed capacity development of African healthcare workers in the area of public health disaster risk management (Olu et al., 2018). The proposal was made because a review of the healthcare system revealed that there were few training opportunities in the area of health emergencies. Additionally, the training that existed lacked the essential components of health disaster risk reduction, preparedness and post-disaster health systems recovery (Olu et al., 2018). These elements of training are vital for healthcare workers who are expected to provide professional healthcare services.

Recent disaster experiences in Africa have revealed that the health disaster management system is fragile (Olu et al., 2018). The disaster experiences reveal that the healthcare system requires competent healthcare workers to lead health emergency and disaster planning and preparedness, response and recovery, and emergency health services delivery (Olu et al., 2018). The enhancement of the health disaster management system in Africa demands that priority be given to effective health disaster management

planning, health disaster training, coordination, assessment, and evaluation of programs (Olu et al., 2018).

Olu et al. (2018) listed six main building blocks for a resilient healthcare system. These include but are not limited to health leadership and governance, health products and technologies, a healthy workforce, financing of health services, management of health information, and delivery of health services (Olu et al., 2018). The enhancement of the healthcare system requires greater focus in the areas listed.

Tang and Feng (2018) deliberated that the level of disaster preparedness does not determine the occurrence or intensity of the hazard. Nevertheless, individual disaster preparedness is important for protecting lives, health, and property. Understanding the factors that motivate people to take protective actions can influence the types of preparedness training programs that are implemented. As a result, disaster planners should develop evidence-based training programs for response. Similarly, health disaster planning should be guided by evidence-based information that can adequately inform response training programs at all levels.

Community Resilience

Disaster management is a comprehensive process and community resilience through participatory methods enhances response capabilities to various types of hazards. The Sendai Framework for Disaster Risk Reduction 2015-2030 outlined that disaster risk management engagements should include all of society and should be inclusive, accessible and non-discriminatory, with an aim to improve organized voluntary work of citizens (Bromley et al., 2017). Community resilience can be enhanced through

preparedness, embracing diversity, engaging while educating, and encouraging mutual exchanges in partnerships (Bromley et al., 2017). In like manner, health disaster management planning can benefit from the community resilience approach which can be adapted to the health sector so there can be a greater participatory approach to health disaster response.

Security

Security is an integral component of disaster management and likewise, healthcare emergencies and disasters require proper security measures to ensure the safety of patients, professionals, staff, emergency response personnel, and healthcare infrastructure. Bukowski (2017) outlined that healthcare facilities should have a security plan to address the security needs of patients, staff, emergency volunteers, and visitors. Security planning should be factored into all health disaster management planning and should be tested using multiple scenarios, at various healthcare facilities. Additionally, security planning should be integrated into every component of the health disaster management process to ensure enhanced response to health emergencies and disasters (Bukowski, 2017).

Health security at the national level is important and is guaranteed when people are prepared and resilient to health disaster consequences. McNeill et al. (2018) suggested that achieving health security is dependent on individuals engaging in preparedness activities at home and in the community. Preparedness, resilience, and risk reduction begins at the individual level. However, many individuals over-estimate their level of preparedness which negatively influences the general state of preparedness of a

community (McNeill et al., 2018). In fact, people's perception of their level of disaster preparations will influence the quality of effort that they exhibit when undertaking preparedness training and other activities (McNeill et al., 2018). For this reason, health disaster planning should also focus on individual perceptions of disaster risk.

Special Populations

The frequent occurrence of natural disasters such as hurricanes and earthquakes expose a number of vulnerable populations to conditions and impacts that increase their risk exposure and vulnerabilities. The elderly is one such population and healthcare professionals should take steps to build community resilience and capacity among healthcare workers to ensure that healthcare responders are trained to care for the elderly during emergencies and disasters (Wyte-Lake et al., 2018). It is essential to provide critical services to vulnerable populations such as the elderly and children during emergencies and disasters (Horner et al., 2018). For example, special needs populations require more attention than those of the general population, and therefore health disaster planners should allocate dedicated spaces at shelters for those persons (Horner et al., 2018).

Health disaster planners should be strategic about their preparedness for special and vulnerable populations. Promoting safety and minimizing health disaster risks should be the priority (Horner et al., 2018). Disaster risk reduction requires action at the national, agency, community, and individual levels, and it is important to understand the underlying reasons for various actions that are taken or not taken during emergency or disaster response.

Effects of Disasters on Healthcare Workers

Following a disaster, emergency workers including healthcare providers are exposed to severe working conditions, inhumane situations, and unpredictable responses from victims (Nagamine et al., 2016). Recovery efforts appear to focus more on physical infrastructure than on social and human capital (Cagney et al., 2016). Given that disasters are becoming more frequent and intense, there is need to have a greater understanding of the impact of these events on human resources (Schmitt et al., 2016).

After a disaster, physical conditions such as flooding, damage to roads, and landslides may make it difficult or impossible for healthcare staff to report for duty. The shortage of healthcare workers after a disaster can lead to consequences such as increased rates of morbidity and mortality (Salmani et al., 2019). As a result, healthcare workers should plan for such events and ensure structures are in place to enable the adequate delivery of healthcare services after a disaster (Salmani et al., 2019).

The problems related to climate change and variability are expected to persist and increase and populations that have low levels of human and socio-economic development are expected to suffer increased health risks and consequences (Mak & Singleton, 2017; Nagy et al., 2018). As a result, whenever there is a disaster, it is anticipated that there will be increased demands for healthcare services from the healthcare sector. Therefore, healthcare workers will be expected to provide services in excess of the normal rates. Given that healthcare workers are already exposed to workplace stressors based on the nature of the job, this can be exacerbated by the overwhelming health consequences of a disaster (Mattei et al., 2017). Consequently, burnout which is emotional exhaustion, can

be experienced by the healthcare workers and significantly impact their performance (Mattei et al., 2017).

Given that disasters are becoming more frequent and intense, the impacts of these events are becoming more overwhelming for the healthcare sector. Consequently, healthcare workers are the ones who come in direct contact with the additional demands for healthcare services as a result of the disaster (Civaner et al., 2017). During emergencies and disasters, workplace stressors are increased in the health sector especially at hospitals where the infrastructure may be compromised, and healthcare workers are the ones directly impacted (Civaner et al., 2017).

Civaner et al. (2017) further outlined that not only are healthcare workers faced with personal issues such as loss of homes and loved ones, but they are also faced with the issues of addressing the problems of those seeking healthcare services. Therefore, it is possible for healthcare workers to become exhausted, frustrated and emotionally devastated when there is a disaster (Shapira et al., 2019). This situation can lead to lapses in judgement where healthcare workers may subconsciously deviate from normal ethical standards and practices (Civaner et al., 2017).

While fatigue and burnout may be responsible for errors in judgement among healthcare workers as it relates to ethical standards, there are other factors that may contribute (Mattei et al., 2017). According to Civaner et al. (2017), the poor attitudes of public authorities, politicians, and relief organizations can impact negatively on healthcare workers and lead to lapses in ethical standards among them during emergencies and disasters. These ethical problems can include discrimination, unjust

resource allocation, and violation of personal rights (Civaner et al., 2017). Healthcare workers may be affected by the problems outlined and which can result in unethical behaviors such as discrimination, disregard for ethical standards and guidelines, and mismanagement of patients (Civaner et al., 2017).

Healthcare workers are at the forefront of responses to emergencies and disasters. While health sector departments and entities have diverse policies governing healthcare workers and disasters, most of them expect some or all employees to report for work when there is a disaster (Rutkow et al., 2017). Some healthcare workers have contracts or job descriptions that clearly outline their expectations during emergencies and disasters (Rutkow et al., 2017). However, healthcare workers are impacted by the disaster similarly to everyone else in the population, but this does not exclude them from being required to provide more healthcare services than in normal times.

Quevillon et al. (2016) acknowledged that response workers, whether volunteers or paid staff including healthcare workers, place themselves at great risk of physical and psychological harm to serve the needs of others. However, there are times when personal circumstances make it impossible for healthcare workers to be able to respond in emergencies and disasters. Consequently, employers should develop plans that address self-care and other needs of employees during disasters which may enhance the prospects of them showing up for work (Quevillon et al., 2016).

According to Morris et al. (2016), hospital workers are critical to the functioning of hospitals following a disaster. The increased demand for health services from hospitals and healthcare workers can be overwhelming. Consequently, hospitals should have

adequate plans to address staffing issues that may arise whenever there is an emergency or disaster (Morris et al., 2016).

Pharmacists are healthcare workers and they perform an important role in the distribution of medication following a disaster, but their role is sometimes not recognized. According to Mak and Singleton (2017), community pharmacists are faced with significant challenges following a disaster. These challenges include increased demand for services, the use of damaged infrastructure, and shortage of medication due to interruptions in transportation and delivery services.

Hurricane Maria in Puerto Rico in 2017 caused destruction and led to significantly reduced availability of pharmacists and pharmaceutical products and services (Melin et al., 2018). As a result, many patients and citizens with acute or chronic medical conditions were confronted with a situation where medications were unavailable for long periods which negatively impacted morbidity and mortality (Melin et al., 2018). Consequently, pharmacists should be recognized as healthcare providers before and following disasters, and should be integrated into disaster planning for the healthcare sector.

The shortage of specialized healthcare workers and medication that may occur following a disaster can have devastating effects on morbidity and mortality (Salmani et al., 2019). While it is important to have a healthy healthcare workforce to respond to disasters, there is no one solution to the problems that may arise. Self-care strategies should be a critical component of the planning, training, and management of healthcare staff in preparation for disasters (Quevillon et al., 2016).

Revising Health Disaster Management Plans

A health disaster management plan is a document which outlines the actions and activities that should be undertaken by the healthcare sector whenever there is an emergency or disaster. A well-written plan is used by healthcare workers to enhance preparedness for emergencies and disasters. Consequently, the use of health disaster management plans increases the probability of successful response to disaster events by healthcare workers (Seyedin et al., 2011).

Following the response to a disaster, healthcare workers should conduct an assessment of their actions and a review of the usefulness of the plan which was used. Ahmed (2016) recommended that the review and revision of a health policy or plan be a periodic process which should have a purpose, should be informed by scientific data, and should have a goal. The main aim of evaluating a health disaster plan is to identify gaps and make recommendations toward the revision of the plan in order to enhance the healthcare response for the next disaster event (Ahmed, 2016).

Significance of Health Disaster Management Plans

Climate change has led to more frequent and more intense natural hazards. There have also been increases in man-made hazards. As a result, the burden of caring for victims of both natural and man-made hazards will increase (Langan et al., 2017). Improving the healthcare outcomes for those impacted by disasters should be a goal of healthcare sectors worldwide. Lucchini et al. (2017) determined that comprehensive, detailed, and up-to-date health disaster management plans are required to address deficiencies in health disaster response.

Health disaster management plans should be developed based on the anticipated increase in the number of patients following a disaster and the possible reduction in staff (Itzwerth et al., 2018). Plans should also take into consideration the reduced operational capacities of hospitals due to damaged infrastructure and equipment (Itzwerth et al., 2018). Health disaster management plans are necessary for effective response to disasters, and should be tested regularly (Indrakanti et al., 2016).

The aim of health disaster planning is to minimize loss of life and property whenever there is an emergency or disaster (Leider et al., 2017). The non-existence of health disaster plans will exacerbate circumstances such as property damage and destruction, injuries, deaths, and other long lasting mental and physical illnesses and disabilities (Lucchini et al., 2017). While health disaster plans address the prevention of physical and mental effects on people, they should also address ethical subjects such a fairness, privacy, protection of rights, and equitable allocation of resources.

Health disaster plans should guide the operations and functions of response teams. Consequently, reading and understanding a health disaster management plan should be simple and the plan should be easily accessible (Itzwerth et al., 2018). In the event of an emergency the disaster plan should be available for the guidance of the response team, who should be knowledgeable about the contents (Itzwerth et al., 2018).

While health disaster planning is important for the success of response to health disasters, the plan by itself will not enhance the response process. Indrakanti et al. (2016) outlined that health disaster plans require sufficient resources, both human and financial for them to be effective. Health disaster management plans should have input from all

stakeholders, and should be resourced, tested, and reviewed and revised on a regular basis. Finally, the plans should make provisions for training, and those who are trained should implement.

Stakeholders in Health Disaster Planning

Collective action theory is based on the principle that combined actions of group members will benefit the larger group and sometimes even those who are not interested will be included in the proceeds (Degli Antoni, 2016). Buchanan and Yoon (2012) explained that many times the population is unable to refuse the benefits of collective action. The successful implementation of health disaster plans requires actions from multiple stakeholders, and will benefit whole communities and populations.

Health disaster planning requires the input of multiple stakeholders (Phillips, 2015). The whole community approach is inclusive and involves participants who represent many sectors of the society (Haddow et al., 2014). Additionally, this approach allows stakeholders to make contributions to the planning process on behalf of those whom they represent (Haddow et al., 2014; Phillips, 2015). Further, the involvement of multiple stakeholders can produce comprehensive health disaster plans that represent the views of the majority. For this purpose, stakeholders for health disaster planning include public officials, emergency managers, health sector leaders, voluntary groups, residents, and others (Phillips 2015).

Stakeholder engagement in disaster planning is a collaborative process that has proven to be successful because it incorporates the relevant individuals and groups (Documet et al., 2018). Additionally, stakeholder engagement can be used to identify

knowledge gaps and promote innovation at the community level through collaboration (Documet et al., 2018). Therefore, stakeholder engagement should be detailed and should involve successive meetings where ideas are reviewed, revised, and refined to obtain the best results (Documet et al., 2018).

While it is strategic to involve stakeholders in health disaster planning, it is important to select the ones that are relevant to the specific process (Bostick et al., 2017). Wrongly selected stakeholders can prove to be counter-productive and can confuse the planning process. Therefore, the appropriate stakeholders should be involved in every stage of the planning so that they have a comprehensive understanding of the process and content (Bostick et al., 2017). As a result, this will enable the stakeholders to participate in the response and recovery processes with reduced frustration (Bostick et al., 2017). An integrative stakeholder involvement approach will benefit stakeholders and those whom they represent.

Summary and Conclusions

Healthcare workers in Jamaica should be familiar with the *Ministry of Health Procedures Manual No. 7, Disaster Management* which should be up-to-date at all times. The document guides the functions of healthcare workers when they respond to disasters. Jamaica is threatened by hurricanes each year and these hazards cause financial, economic, and infrastructural losses. Additionally, healthcare staff encounter personal challenges which may prevent them from being available for service.

This generic qualitative research was guided by the collective action theory which emphasized collective action for shared benefits. In this study, I explored the perspectives

of healthcare workers in Jamaica about the *Ministry of Health Procedures Manual No. 7, Disaster Management.* I selected collective action theory as most appropriate for this study because it emphasized collective actions for success.

Disaster preparedness plans outline the procedures for response to emergencies or disasters (Demming, 2016). Business continuity plans prepare organizations to respond to sudden changes in operations which may force them to relocate (Seyedin et al., 2011). Both disaster and continuity plans are essential components of business and organizational operations.

The *Ministry of Health Procedures Manual No. 7, Disaster Management* outlines the procedures necessary for the healthcare sector in Jamaica to respond to disasters. Hurricanes impact healthcare workers and infrastructure and therefore it is important to train and prepare healthcare workers to use disaster plans to guide their response to hazards. Given that disasters are becoming more frequent and intense, healthcare workers should be prepared to manage situations such as reduced numbers of healthcare workers and increased demand for healthcare services after disasters.

The next chapter outlines the research design and rationale and presents the research questions. The role of the researcher will be outlined. In the chapter, I provide details about the pilot study and procedures for recruitment, participation, and data collection. Additionally, the data analysis and protection plans will be outlined. Chapter 3 will end with a focus on issues of trustworthiness and ethical considerations.

Chapter 3: Research Method

The purpose of this generic qualitative study was to explore how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. Given that the healthcare sector in Jamaica is confronted with the threat of hurricanes each year, it is important to have effective and up-to-date preparedness, response, and recovery plans. These plans should outline the steps required for response to hurricanes and other hazards, and will guide healthcare workers in the management of the processes before, during, and after a disaster. Therefore, I collected qualitative data relating to healthcare workers' perceptions of the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I collected data for this study through the use of individual interviews. In this chapter, I outline the research design and rationale, research questions, methodology, instrumentation, role of the researcher, pilot study, data analysis plan, and trustworthiness which will include credibility, confirmability, transferability, dependability, and ethical procedures.

Research Design and Rationale

I explored perceptions of healthcare workers about the effectiveness of Jamaica's health disaster management plan. The following research questions were used to guide the exploration:

The primary research question for this study was: How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?

The subquestions for this study were:

1. How do healthcare workers in Jamaica describe using the health disaster management plan during emergencies?
2. How do healthcare workers in Jamaica perceive revisions to the health disaster management plan following emergencies?
3. What experiences have healthcare workers in Jamaica had that will either encourage or discourage their use of the health disaster management plan?

Research studies are conducted using three distinct methodologies, each chosen based on the researcher's objectives for the study. McCusker and Guynadin (2015) listed the methodologies as qualitative, quantitative, and mixed methods. I used the qualitative methodology to conduct this study. The qualitative methodology focuses on understanding situations, individuals and groups, and obtaining in-depth appreciation of important moments and events (Rubin & Rubin, 2012). According to Ravitch and Carl (2016), qualitative researchers believe that there are multiple perspectives and truths and therefore focus on lived experiences. Qualitative research is a mode of inquiry that is saturated with subjectivity (Dodgson, 2017; Ravitch & Carl, 2016). The qualitative methodology is appropriate for understanding the perceptions of individuals or groups about specific issues that affect them (McCusker & Guynadin, 2015).

Qualitative research aims to understand issues from a person's perspective in detail rather than to make generalizations (Setia, 2017). Qualitative inquiry explores how and why human beings behave in specific ways in their natural environments (Malterud et al., 2017). The generic qualitative approach is best used when the researcher's focus is obtaining people's perspectives on events or processes (Percy et al., 2015).

Phenomenology and grounded theory are two subcategories of qualitative research considered for this study. Phenomenology focuses on the lived experiences of a person or group with the specific phenomenon (Patton, 2015). The goal of phenomenology is an in-depth understanding of lived experiences so the researcher can obtain participants' perceptions of those experiences. Phenomenology therefore depends on lived experiences (Dodgson, 2017; Percy et al., 2015).

Phenomenology is characterized by the descriptive and interpretive approaches (Dodgson, 2017). The descriptive approach indicates that the researcher disengages her or his emotions and knowledge of the phenomenon when conducting interviews, which is called bracketing (Dodgson, 2017). The interpretive approach suggests that it is impossible for the researcher to disengage from feelings, experiences and knowledge. Therefore, researchers and participants bring distinctive characteristics to the interview process (Dodgson, 2017).

In this study, I explored perceptions of healthcare workers about the effectiveness of Jamaica's health disaster management plan which is used to respond to hurricanes and other emergencies. I did not seek to explore individual experiences with hurricanes or emergencies, so it was not possible to explore the essence of a specific phenomenon, and therefore phenomenology was not considered as the most appropriate approach for this study.

Grounded theory places emphasis on the relationships between individuals and social interactions. This approach focuses on outcomes of social interactions and aims to generate theory (Dodgson, 2017). Unlike phenomenology, grounded theory is used to

analyze actions and processes to formulate theory (Patton, 2015).

Grounded theory is used in qualitative studies when the researcher is interested in using data to construct theory. The theory should be based on social processes and interactions and be dependent on people's actions and reactions (Rooddehghan et al., 2019). Grounded theory indicates that people shape the world by their actions, reactions, and processes while influencing change.

In this qualitative study, I explored perceptions about the effectiveness of a specific plan. While I examined the perceptions of participants about the process of reviewing the plan, I did not use this process to inform theory. Since I did not develop theory, the study did not meet the requirements for alignment with a grounded theory exploration.

I used the generic qualitative approach to conduct this study. I explored perceptions about the effectiveness of Jamaica's health disaster management plan. According to Percy et al. (2015), the generic qualitative approach aligns best with situations where the researcher's objective is obtaining perspectives on people's interactions with events and processes. The generic qualitative inquiry addresses people's perspectives of actual experiences that can be reflected upon and described (Percy et al., 2015).

I conducted this research using the generic qualitative process and not any of the established qualitative traditions such as phenomenology and grounded theory. The generic qualitative process requires meticulous records of the data collection and analysis processes since there are no established guidelines to be followed (Dodgson, 2017). For

this reason, issues of trustworthiness should be carefully considered and observed when conducting generic qualitative research (Dodgson, 2017).

Role of the Researcher

The aim of generic qualitative research is to explore perspectives and opinions on issues and events (Percy et al., 2015). This methodology requires data collection and analysis that should be carefully planned and executed. Since qualitative research involves human subjects, researchers should be careful to avoid and reduce risk, bias, harm, or any behavior that will violate or endanger participants (Sanjari et al., 2014). Researchers should also be aware of potential psychological and other risks to themselves and other members of the research team because of the intense and intimate nature of qualitative research (Stahlke, 2018).

Qualitative research is conducted with humans and some groups are considered as vulnerable. The qualitative researcher is intimately involved in the research process from design to completion. The qualitative researcher has a responsibility to protect the participants from harmful consequences that may arise from their participation (Sanjari et al., 2014).

The role of the qualitative researcher is to plan and lead every stage of the study. The researcher should develop and design the concept, and then proceed with the other steps of the process. These steps include interviewing study participants, transcription, analysis, and reporting (Sanjari et al., 2014). Qualitative researchers should be adequately trained and prepared for the intense exploration involved in the qualitative process (Goodell et al., 2016).

I have worked in disaster management and the healthcare sector for the past 11 years. In addition, I hold professional certification in business continuity management and emergency care and treatment. I have also received training in several areas of disaster management. Therefore, I have a strong interest in both disaster management and healthcare and the linkages that may exist.

Qualitative researchers can sometimes have personal biases. One such bias is anticipated outcomes, which are expectations that the researcher may have based on previous experiences (Wadams & Park, 2018). In this research, I explored the perspectives of healthcare workers in Jamaica about the health disaster plan. Although I had worked in the areas of disaster management and health, I had not worked with, reviewed, nor evaluated any health disaster plans. Therefore, I anticipated that I would not have any biases in this research. However, to enhance rigor in this study, I assumed that I may have unidentified biases.

I used bracketing through the use of a self-reflective journal to mitigate against researcher bias. Bracketing is a strategy used to minimize researcher bias whereby the researcher attempts to detach themselves from previous knowledge or experiences that may influence the research process (Sorsa et al., 2015; Tufford & Newman, 2012; Wadams & Park, 2018). However, it is not practical for the researcher to separate themselves totally from previous experiences, and therefore bracketing does not eliminate but significantly reduces the possibility of bias (Sorsa et al., 2015; Wadams & Park, 2018).

For this qualitative study, I applied bracketing through the use of a journal in which I recorded my thoughts and feelings about the use and review of the disaster management plan. I recorded any subjective thoughts that may have influenced the way I conducted interviews and interpreted data. According to Tufford and Newman (2012), the researcher can make reflective notes in the journal about reasons for conducting the study, assumptions about the topic, and personal value system. Sorsa et al. (2015) explained that bracketing can occur at multiple stages throughout the research. However, I began the bracketing process at the recruitment stage of the research since I believed that any possible personal influences and bias may have begun at this stage.

I conducted this study among healthcare workers in Jamaica. I live in Grenada, and therefore depended on assistance from healthcare workers in Jamaica to identify and make initial contact with proposed participants. I established contact with the health disaster coordinator in Jamaica who agreed to assist with the process of identifying initial contacts for the snowball sampling method.

I followed up with proposed participants by email, telephone, or WhatsApp to make arrangements for the interviews. When I was satisfied that all arrangements were made, I conducted the qualitative interviews using telephone and WhatsApp calling.

According to Sanjari et al. (2014), the researcher should protect participants from harmful consequences. I anticipated that during the interview process there would be very little or no possibility of physical harm. To ensure the safety of participants, they were allowed to select the location for the interview which enhanced privacy.

I conducted the qualitative interviews for this study by telephone and WhatsApp calling. There was no need for physical activity such as touching or hugging. In addition, there were no requirements for blood or other body samples. These measures reduced the possibility of physical harm and unethical practices or behavior.

Participants were required to provide details about the use of the health disaster management plan. There were no occasions during the interviews where participants recounted experiences with hurricanes or other emergencies. To mitigate potential distress from such instances, I reminded participants at the beginning of the interview that they were not required to provide such details. Additionally, I structured the interview questions to guide the participants away from such responses.

While the researcher is responsible for protecting study participants from harm (Sanjari et al., 2014), there are instances when harmful consequences such as damage to professional reputation, loss of job, and harassment may occur. To avoid such harmful consequences for the participants of this study, I used the snowball sampling method to enhance confidentiality. Additionally, instead of using names or other identifying characteristics, I assigned a number to each participant to reduce the possibility of the data being traced to individuals.

I assured participants of privacy and confidentiality. These features of the data collection and analysis processes enhanced the possibility of participants agreeing to participate in the study. I ensured privacy and confidentiality by using the snowball sampling method, through assigning numbers instead of names, and by securing all data as outlined in the data analysis section. These measures significantly reduced the

possibility of participants' information being provided to anyone else, and therefore issues of harm were minimized.

The Office for Human Research Protections provided guidelines for conducting research with human subjects in Jamaica. I read the guidelines, which aligned with those provided by Walden University. I consulted these guidelines in the preparation of all research documents which included interview guide, consent forms and research questions.

At the end of data collection, I transcribed the interviews and proceeded with the analyses of the data using thematic analysis. At the end of data analyses, I prepared the detailed report of the results along with recommendations. Throughout the research process I maintained a detailed journal in which I recorded comprehensive details of the study. The journal served as an audit trail which was used to enhance trustworthiness.

There were no supervisory or instructor relationships involving positions of power and personal and professional relationships with the participants. The absence of these relationships significantly reduced the possibility of exercising power and control over the participants. I used no incentives and therefore, the participants were interviewed on a voluntary basis.

Researcher bias in the selection of participants was reduced since participants were selected from the healthcare sector in Jamaica using the snowball sampling method. The snowball sampling method enhanced participants' anonymity and privacy. I guaranteed privacy and confidentiality by using the snowball sampling method. This

encouraged participation from prospective participants who may have had reservations about the process.

Methodology

I conducted this qualitative study among the population of healthcare workers in Jamaica. The workers experienced a hurricane in the past 15 years and had to use the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I selected the participants using the snowball sampling method.

Snowball sampling is used when members of a population cannot be located easily, or when members of the population know or are aware of each other (O'Sullivan et al., 2017; Setia, 2017; TenHouten, 2017). Snowball sampling works well in circumstances where members of groups form informal sub-groups (O'Sullivan et al., 2017). Additionally, snowball sampling technique is informal and is best used when members of the population may not want to be identified or are hidden (Waters, 2015).

I solicited participants for this generic qualitative study from among healthcare workers in Jamaica. Since the majority of healthcare workers are government employees, some of them may have been reluctant to participate in the study because it involves providing opinions on a government document. Therefore, the sampling method must have been appropriate and must have allowed for confidentiality and privacy (Waters, 2015). For this reason, I conducted participant recruitment using the snowball sampling methodology. This will be discussed in detail later in this chapter in the section on procedures for recruitment.

Qualitative research should be thorough and balanced with no gaps in the results (Rubin & Rubin, 2012). It is generally not necessary to conduct a vast number of interviews during qualitative research, but it is important to explore and obtain as many perspectives as possible. Qualitative interviews should continue until no new information is forthcoming, which therefore signifies that data saturation has been achieved (Rubin & Rubin, 2012).

As qualitative researchers conduct interviews, they reach a point in the process where individual participants become repetitive and provide the same or similar responses as previous responders. When this occurs, the researcher has successfully achieved data saturation (Kerr et al., 2010; Tran et al., 2016). In a study of nursing students' experiences regarding nursing processes, data saturation was achieved after interviewing nine persons (Heidari & Hamooleh, 2016). Guest et al. (2006) explained that in a study they conducted, data saturation was achieved after 12 interviews. However, there is no prescribed formula for estimating the number of participants that will be necessary to achieve data saturation (Kerr et al., 2010; Tran et al., 2016)

For this qualitative research, I interviewed participants until data saturation occurred. While there is no established number that will guarantee data saturation, I anticipated that data saturation for this study would be achieved by conducting 20 or fewer interviews. Additional interviews would have been conducted if more than 20 interviews were required to achieve data saturation.

Instrumentation

I developed an interview guide which was used to conduct the data collection for this qualitative research (see Appendix A). I also prepared a table which listed the main interview questions. Each interview question was aligned to the main research question or one of the subquestions (see Appendix B). The interview consisted of open-ended questions which were based on the research questions as outlined in Chapters 1 and 3. Additionally, the interview was focused on the problem statement which investigated how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*.

I used the semistructured approach to conduct the interviews. According to Rubin and Rubin (2012), the semistructured approach to conducting interviews is one where the researcher prepares questions on a topic, and during the interview asks additional probing questions. For this qualitative interview, the main questions in the interview protocol were used to guide the interview. However, additional questions were prepared which were used for probing where necessary (see Appendix A).

English is the official language of Jamaica. Therefore, I prepared all materials in English. Additionally, I conducted all interviews in English. There were no participants who were not fluent in English.

I administered the interviews using direct telephone and WhatsApp calling. I recorded interviews using a hand-held audio recording device and I transcribed the recordings manually for analysis. No participant objected to the audio recording of the interviews. The responses were transcribed verbatim.

Travel restrictions imposed by Jamaica due to the COVID-19 pandemic prevented me from travelling to Jamaica to conduct face-to-face interviews. Therefore, all participants were asked to respond by email to indicate informed consent approval.

I developed the interview instrument based on the research questions. I conducted a pilot study with two participants to test the instrument. The results and feedback were used to review the questionnaire. The results of the pilot study were used to establish and enhance content validity.

Pilot Study

A pilot study is a small-scale version of the actual data collection process used as a strategic introduction to the actual research study (Doody & Doody, 2015; Leon et al., 2011). Piloting is used to test data collection instruments in order to review, refine, and revise them (Doody & Doody, 2015; Ravitch & Carl, 2016). According to Larsen et al. (2018), pilot studies and feasibility studies are similar but distinctly different. Feasibility studies seek to verify whether something can be done, how, and why. Similarly, pilot studies ask the same questions, but in addition use a mini-study designed to test the process.

In qualitative research the pilot study aims to enhance the interview instrument as well as the approach to conducting the interviews (Ravitch & Carl, 2016). Additionally, the pilot study can determine if the interview instrument will generate the required data that will answer the research questions. The pilot study should be used to identify strengths and weaknesses that may occur in the main study (Doody & Doody, 2015).

A pilot study is used to assess the study's process, required resources, management, recruitment process, and scientific requirements (Leon et al., 2011; Thabane et al., 2010). According to Hazzi and Maldaon (2015), the pilot study assists with identifying logistical issues before conducting the main study and the results can inform modification that may be needed. The pilot study should be properly documented, and may or may not be used in the general study. Piloting is necessary to enhance and achieve rigor and validity of the study (Doody & Doody, 2015; Ravitch & Carl, 2016).

I conducted a pilot study for this generic qualitative research. The pilot study tested the interview instrument with the objective of refining and enhancing the document if necessary. Additionally, I conducted the pilot study to make observations that would have guided any changes that may be necessary in my approach to conducting the interviews. Larsen et al. (2018) explained that pilot studies provide an empirical platform from which the actual study can be planned and executed.

The pilot study provided me with practice in conducting the interviews. The pilot aimed to highlight any deficiencies that may have existed with the structure of the interview questions. I identified no inconsistencies with the questionnaire, and therefore, no changes were made to the interview guide.

I conducted the pilot study with two volunteers from Jamaica who met the criteria for selection for the actual research interviews as outlined in the previous section on methodology. The Jamaica health disaster coordinator contacted two participants and provided the volunteers' contact details to me. I contacted the individuals by email and

telephone. After I explained the procedures of the pilot study to the participants, they were asked to provide proof of consent either by email or by telephone.

The two volunteers were willing to participate in the pilot study, and therefore, there was no need to ask them to provide the names of additional colleagues. I anticipated that the volunteers would have accepted the invitation to participate in the pilot study since the results can be used to enhance health emergency preparedness in the healthcare sector in Jamaica.

The pilot study was used to begin the snowball recruitment process. The participants were asked to provide contacts for colleagues who may be willing to participate in the main study. I anticipated that this process to recruit participants would be successful since it provided a measure of anonymity and privacy to prospective participants.

The interview guide used for the pilot study was the same one used for the main study (see Appendix A). The consent form used for the pilot study was the same one used for the main study.

I conducted the interviews for the pilot study by WhatsApp calling, and these were recorded. I generated a report providing details of the pilot study to be used to make adjustments to the interview protocol and process if necessary. The details of the pilot study process were recorded in the research journal and used as part of the research audit.

The results of the pilot study were not used in the final report. According to Leon et al. (2011), the results of pilot studies should not be included in the report of the main study since changes may be made to the protocol. On the contrary, Thabane et al. (2010)

argued that the results of pilot studies should be included in the final report provided that the sampling frame and methodologies are the same.

This pilot study was conducted with two participants to assess the interview process, and the results of the pilot study were not analyzed. Since the aim of the pilot study was to assess the interview process, and the recordings obtained were not transcribed and analyzed, it was not possible to include the results in the main study. Therefore, results of the pilot study were not included as part of the results of the final report.

Procedures for Recruitment, Participation, and Data Collection

I selected participants for this research from among healthcare workers who reside in Jamaica, have experienced a hurricane in the past 15 years and have had to use the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I selected the 15-year period because the *Ministry of Health Procedures Manual No. 7, Disaster Management* was first produced 32 years ago in 1989, with revisions during the period. The last revision was done in 2019. Healthcare workers who have used the document within a 15-year period would have had both experiences with hurricanes and other emergencies, and institutional knowledge about the use and review of the document. The use of a shorter timeframe may have excluded participants who may be able to provide valuable information.

I obtained approval from the Institutional Review Board (IRB) to conduct this research. In addition, I obtained permission from the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs to conduct the study. I

used the snowball sampling method (Moser & Korstjens, 2018; Waters, 2015) to recruit participants for this study. Snowball sampling enhanced the privacy and confidentiality of participants (Waters, 2015).

To begin the snowball sampling process, I obtained the names of two individuals who fit the selection criteria. This information was obtained through the health disaster coordinator, and the two participants were part of the pilot study. I explained the study objectives and purpose to the participants and I requested their approval to begin the snowball sampling process. The two individuals agreed to participate and there was no need to repeat the process.

I asked the two individuals who agreed to the process to provide my name and contact details to others who may be interested in participating in the study. When these persons contacted me, they were screened (see Appendix C) to ascertain their interest to participate and their involvement with the use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. The prospective participants who met the requirements and agreed to participate were recruited. Prospective participants who did not meet the requirements were thanked and asked to recommend other prospective participants.

Following the initial contact and recruitment, I contacted prospective participants through telephone calls, email messages, or WhatsApp calls, and the criteria, interview objectives, and process were explained to them. I sent the consent form to each potential participant by email. I asked the potential participant to send a return email with the word

"consent" as their formal agreement to participate. I assured the participants of the option to withdraw from the research at any time.

There is no specific number of participants recommended as sufficient for qualitative data collection. The qualitative researcher should continue data collection until data saturation is achieved as explained in the previous section on methodology.

I selected to aim to recruit 20 prospective participants for this study. While I believed that data saturation would have been obtained with fewer than 20 participants, I decided to attempt to recruit 20 as a safety net. This number accounted for any participants who may have dropped out or may not have been available at the time of the interviews.

There was the possibility that the snowball sampling method may not have yielded 20 participants. In the event that I did not obtain that number of participants, I would have contacted the health disaster coordinator in Jamaica and requested additional names from records of disaster plan review meetings. However, the snowball sampling method yielded enough participants.

At the end of the recruitment process, I provided additional information to the prospective participants about dates and times of interviews. I conducted the qualitative interviews by telephone and WhatsApp calls.

I used a researcher-developed interview instrument (see Appendix A) to collect data and this was a one-time event for the participants. Each interview was expected to last approximately 30 to 40 minutes. I recorded the audio of the data collection interviews using a hand-held mobile device.

According to Adarmouch et al. (2020), the protection of research participants' privacy and identity in qualitative research is an ethical requirement which researchers should view very seriously. No one should be able to link the data or the final report to any particular research participant. For this qualitative research I submitted a transcript of each interview to the respective participants for verification and member-checking of their transcribed interview.

I submitted the transcripts to the participants for verification by email (see Appendix D). In order to ensure privacy and protect the identities of the participants, the PDF file format was password protected. I submitted the passwords to the participants by telephone. This action eliminated the possibility of someone else having access to the information in the event that it was sent to an incorrect email address. It also reduced the possibility of an unintended recipient receiving both the password-protected document and the password.

At the end of the verification process the participants provided their responses by email and I submitted a response email to them. In that email, I thanked the participants for their review and participation. In the email, I also reinforced some of the details outlined in the informed consent form such as privacy and confidentiality. The participants were informed that the final report will be provided to the Ministry of Health, and that they can also request a copy of the findings. This process was used as the exit strategy for this research.

Data Analysis Plan

Data analysis is a step-by-step process that researchers follow from the raw data to the answers to the research questions (Rubin & Rubin, 2012). According to Moser and Korstjens (2018), qualitative data analysis requires that the researcher organizes the data into manageable chunks, thus making the process controllable. Qualitative data analysis requires a plan to ensure success.

I analyzed the data for this generic qualitative study using thematic analysis. According to Braun and Clarke (2012), the thematic approach to data analysis aims to use a systematic method to provide meaning to patterns in a data set. The thematic analysis approach focuses on commonalities in the expressions across the data set, and seeks to recognize those that are relevant to answering the research question/s (Braun & Clarke, 2012). New and inexperienced researchers sometimes use thematic analysis which has six steps: (a) familiarizing yourself with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing potential themes, (e) defining and naming themes, and (f) producing the report (Braun & Clarke, 2012).

In the first step of data familiarization, I conducted data transcription. The interviews obtained during the data collection for this qualitative research were recorded. I assigned a number to each interview instead of a name or other traceable identifying marks for anonymity purposes. The recordings were transcribed verbatim. Transcription was done manually. I used the interview recordings to check for accuracy. The process involved reading the transcripts while listening to the recordings.

The citizens of Jamaica speak a unique dialect. I anticipated that electronic transcription software may have produced numerous errors in transcribing the recorded data. During my check for accuracy, I observed that transcription errors were too frequent and numerous, and therefore, I transcribed the recordings manually. This reduced the frequency of errors.

Following the comprehensive transcription process, I spent time reading through the transcripts and familiarizing myself with the data. Moser and Korstjens (2018) explained that it is important for researchers to immerse themselves into qualitative data trying to find meaning and deep understanding, so I listened to the recordings of the interviews while reading the transcripts, and making notes. This process continued until I was satisfied that I was sufficiently immersed and intimately familiar with the contents of the data.

During the familiarization process, I highlighted unique text and quotes that appeared to be noteworthy based on the research questions. According to Saldaña (2016), the process during data analysis whereby the researcher takes the opportunity to take note of outstanding quotes made by research participants during data collection is called pre-coding. These quotes can be used to enhance the analysis and reporting processes or to support theory development (Saldaña, 2016). I engaged in pre-coding during the familiarization process.

The next step of the analysis process was generating initial codes. At this stage the researcher begins to bring meaning to the data by attaching words and phrases to represent chunks of data (Braun & Clarke, 2012). The researcher is trying to link the data

to the research questions (Braun & Clarke, 2012). Saldaña (2016) explained that a code is generated by the qualitative researcher and can be a word or phrase that captures the essence of the portion of data.

According to Williams and Moser (2019), coding aims to bring meaning to data. I performed the initial coding process of the transcripts and repeated the process for validity by using different coding techniques such as process coding, which has also been called action coding (Saldaña, 2016). I used the computer software Microsoft Excel to assist with the coding process by grouping codes that are similar in preparation for the theming process.

Saldaña (2016) outlined six elemental methods in first cycle coding. The one that is aligned closest to this generic qualitative study is process coding. This method is closely associated with situations where people work together to achieve a common goal or to resolve an issue (Saldaña, 2016). In process coding, the continuous forms of verbs are used to denote action. Additionally, process coding suggests actions that occur in sequence over time (Saldaña, 2016).

This generic qualitative study is grounded on the collective action theory which outlines that public goods produced through collective actions benefit everyone without exception (Degli Antoni, 2016). Process coding is also based on sequential actions over time (Saldaña, 2016). Therefore, process coding was used to support the coding procedure for this study.

The coding process is followed by the search for themes. Braun and Clarke (2012) explained that generating themes involves grouping codes that share similarities.

According to Saldaña (2016), theming the data is that process where the researcher is trying to identify focused meaning from the data. Theming uses extended phrases or sentences to categorize or group the data where there are repeated ideas. The themes bring meaning to clusters of data (Saldaña, 2016). Themes are significantly fewer than codes, but are used to represent the codes in telling the overall story of the data. Themes are also used to attempt to answer the research questions (Braun & Clarke, 2012).

Saldaña (2016) explained that theming is a result of coding and seeks to use a phrase or sentence to bring one meaning to several codes or categories. Before the theming process, I conducted an extensive grouping and categorization of the codes. I examined the categories further to identify additional ones or those that can be merged.

When the categorization process was exhausted, themes were then assigned to the categories. I reviewed the themes for similarities and merged them where necessary. This theming process was carefully re-examined for verification since there may have been themes that did not align with the research questions. Themes that do not align with the research question may either be merged with another theme or discarded (Braun & Clarke, 2012).

Qualitative interviews should be aligned to the research questions and crafted in such a way that the responses provided by the participants should be focused and provide answers to these questions. According to Yeong et al. (2018), it is important for an interview protocol to be reliable. While there are other mitigating factors such as ethics, skill, and setting, the interview protocol is one of the critical elements in obtaining accurate responses that will answer the research questions (Yeong et al., 2018).

For this qualitative research there were no instances where the data collection responses appeared not to be aligned to the research questions. This is sometimes caused by inexperience of the researcher (Yeong et al., 2018). Additionally, this can be as a result of differences in opinion by the participant. Interview responses that do not fit the expected or anticipated pattern of the research are called outliers or discrepant cases. Ravitch and Carl (2016) explained that discrepant cases should be used to challenge any preconceived concepts the researcher may have about the research outcomes.

The next phase of the thematic analysis was reviewing potential themes. According to Braun and Clarke (2012), this is a process where the researcher verifies that the themes and the data are matching. This process may require that some codes are relocated or discarded. At this stage the researcher should ensure the quality of the theme, its boundaries, its meaningfulness along with support data, and the coherence of the supporting data (Braun & Clarke, 2012).

The theme-review process may lead to merging or splitting themes. When this process is completed, the researcher should have a coherent set of themes that are directly related to the codes (Braun & Clarke, 2012). At the end of the review, it is recommended that the researcher conducts one final review of the data to ensure coherence of data, codes, themes, and research questions (Braun & Clarke, 2012).

The penultimate step of the thematic analysis was defining and naming themes. At this stage the researcher has identified the themes, and is ready to define them. According to Braun and Clarke (2012), substantial themes are those that have a singular focus, are related but not repetitive, and address the research questions. The researcher

should be able to describe each theme with a few sentences, and these brief descriptions should come together to tell a cohesive story about the data. The collective descriptions of the themes must present the reader with an interesting interpretation of the data (Braun & Clarke, 2012).

I followed the steps outlined above meticulously to achieve meaningful themes that were described succinctly. This entailed detailed and extensive examination and analysis of the data to identify appropriate codes and themes throughout. These were reviewed and revised several times as necessary to ensure rigor and thorough analysis.

The final stage of the thematic analysis process was producing the report. At the end of every research it is anticipated that the researcher will produce a final report. Braun and Clarke (2012) explained that the report obtained from qualitative research begins as an informal process during the early stages of the analysis, continues throughout the process, and culminates with a report that is thorough and encompassing. Additionally, the themes in the analysis should be meaningful and should connect logically in order to produce a coherent report. The final report should provide answers to the research questions (Braun & Clarke, 2012).

At the end of the data analysis using the thematic analysis approach, I prepared the final report. I expanded on the thematic descriptions and summaries which formed the basis for the report, and were included in Chapters 4 and 5. The final report should be based on what study participants reported and should always be evidence-based (Braun & Clarke, 2012).

At the end of data analysis and preparation of the final report, all paper copies of materials relating to data collection and analysis were scanned, saved with appropriate file names, and saved to a password-protected folder. The paper copies were shredded and destroyed with the use of an electrical shredder.

I saved all research-related electronic files in password-protected folders to secure the data. I will store all folders and files using a dedicated external drive in a secure vault for a period of at least 5 years. This is based on Walden University's requirements. During the five-year period the data will only be made available to Walden University upon request. At the end of the five-year period I will destroy the data.

Issues of Trustworthiness

Qualitative research is not exact and perfect but is challenging, complex and complicated and requires measures that will ensure rigor. Several other terms such as credibility, validity, and adequacy are used interchangeably with trustworthiness (Ravitch & Carl, 2016). However, trustworthiness refers to ways that researchers can achieve quality and rigor in a study. Furthermore, qualitative research aims to capture the participants' experiences thoroughly within the context of their lives and perspectives (Ravitch & Carl, 2016). Therefore, it is imperative that researchers achieve a high level and standard of rigor in qualitative research because it is established that validity can never be fully achieved. As part of trustworthiness, this study addressed credibility, transferability, dependability and confirmability.

Credibility

Credibility refers to the researcher's ability to address the complexities of the study in a way that others will trust the results (Ravitch & Carl, 2016). The instruments used and data collected along with the site selected and the population sample can ensure rigor. Credibility can be established based on the research design, sampling strategy, alignment of methods with the research questions, and the richness of the data collected (Ravitch & Carl, 2016).

For this qualitative study, the dissertation committee approved the data collection protocol. I submitted the interview instrument to the IRB for final approval. Walden University guidelines were followed throughout the research.

I conducted a pilot study to verify that the data collection instrument was appropriate. Doody and Doody (2015) explained that pilot studies are used to assess data collection instruments to confirm their validity in relation to the study being conducted. I used the pilot study to enhance the credibility of this study.

According to Liao and Hitchcock (2018), accountability strengthens the credibility of research and one way of ensuring accountability is through comprehensive documentation. Credibility is enhanced through accurate reporting which can only be done when there is detailed documentation (Liao & Hitchcock, 2018). The data collection and analysis processes of this qualitative study were carefully documented and reported to enhance and support the credibility of the study.

Data saturation is that point in qualitative interviews where no new information is forthcoming from interview participants (Hagaman & Wutich, 2017). Although there is

no formula to identify data saturation points, researchers should be observant enough to recognize when study participants no longer provide new material. Hagaman and Wutich (2017) explained that data saturation can be reached with as little as three interviews but the maximum number may vary. I used data saturation to establish credibility for this qualitative research.

At the end of data transcription, some researchers engage in a procedure called member checking where they share the transcripts with participants (Liao & Hitchcock, 2018). Transcripts are shared so participants can verify data. Participants are allowed to add or delete data and make corrections and clarifications where necessary (Birt et al., 2016). The member checking procedure aims to enhance the accuracy of the data (Birt et al., 2016). I enhanced credibility in this study through member checking.

Transferability

Transferability refers to the way in which a qualitative study can be applicable to other contexts while maintaining its originality. Transferability does not mean replicability, but the term is used in qualitative research to refer to the ability of the audience to transfer aspects of the study to other contexts without changing the relevance of the research (Hanson et al., 2011; Ravitch & Carl, 2016). Additionally, readers should be able to apply the results of the study to circumstances that are similar to that which existed for the study. The aim is not to reproduce the study but to apply it to a different qualitative perspective (Hanson et al., 2011; Ravitch & Carl, 2016).

Hanson et al. (2011) explained that transferability can be achieved by detailed and adequate description of sample, setting, and results. The details will enable others to

determine if the research can be adapted to other settings. Since the target population for this qualitative study was healthcare workers in Jamaica, I described the study in sufficient details so that another researcher can apply it to another setting. The study was conducted in a Caribbean country, and therefore, the results may be applicable to other Caribbean countries. I obtained permission from the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs and Walden University to share the results with other countries in the Caribbean. This will promote the possibility of the results being shared and possibly used by other healthcare workers.

Transferability can be obtained through the use of thick description. Cook et al., (2016) defined thick description as a sufficiently meticulous narrative of the context of the research. The correct use of thick description will ensure acceptable levels of rich details of the research process. According to Roller (2019), thick description will outline in abundant narrative the process of the investigation and the interpretations of the findings. Thick description provides sufficient intimate details about the study so other researchers are able to make decisions about its appropriateness for other contexts (Creswell & Miller, 2000).

I used thick description in Chapter 4 to achieve transferability for this study. Thick description included the use of a journal in which I recorded copious and thorough details of the research process. These notes included details of the IRB approval process and the recruitment process. I provided a step-by-step description of the interview process which included reflective notes, and strengths and weaknesses of the process.

The records in the journal included descriptions of the data transcription and familiarization process and the coding procedure. The thematic process was outlined, and the preparation of the report was described in sufficient detail. I used the journal as an audit document from which I reviewed processes as the research progressed. The journal was used to inform the thick description that was outlined in Chapter 4.

The journal contained no names or identifying information. Instead, I assigned numbers to ensure anonymity. The journal was kept in a locked box and the key was secured in a personal vault.

Dependability

Dependability refers to consistency and stability of the data in answering the research question(s). The research method should be appropriate for the type of research and should answer the research question adequately (Ravitch & Carl, 2016). Dependability ensures rigor and reduces the possibility of challenges to the study design, data collection and analytical process (Hanson et al., 2011; Ravitch & Carl, 2016).

According to Forero et al. (2018), dependability can be achieved through the use of an established research audit. In order to achieve dependability for this generic qualitative research, I established a detailed audit trail. The audit provided comprehensive records of every step of the data collection and analysis processes. The use of an audit will enable future researchers to replicate parts of the study or the entire study. The audit also enhanced dependability. Bleiker et al. (2019) explained that the stability and consistency of qualitative research is best expressed through the use of an audit trail which provides comprehensive records of the entire research process.

Creswell and Miller (2000) explained that an audit provides explicit details of decisions and activities of the research process to establish trustworthiness, and can be done through journaling. To establish the audit for this study, I procured a journal in which I recorded all activities relating to the research. I entered written details about the interview process which included IRB approval, permission to conduct the study, recruitment of participants, and pilot study procedures. I recorded comprehensive details about the interviews, the coding process, the thematic approach, and all other aspects of the data analysis process. Additionally, I included samples of documents used in the data collection and analysis processes.

The material written into the journal was scanned and stored in a password protected folder along with the interview records. The documents included in the journal were also scanned and saved in the password protected folder. The journal and all paper copies were stored in a locked box to protect participants' privacy. The key for the locked box was secured in a personal vault.

The detailed journal records served as an audit document so I conducted a self-audit of the research process. The journal and electronic records will serve as audit instruments for other researchers who wish to audit the study for dependability. These records will be kept for at least 5 years based on Walden University requirements. After 5 years I will destroy the records. In addition, all electronic data will be encrypted and securely deleted.

Confirmability

Confirmability seeks to remove the elements of bias since qualitative researchers claim to be neutral. In qualitative research, the researcher is connected to the study in some way, and the removal of bias and subjectivity must be approached in a systematic way, thereby ensuring that the results of the research can be confirmed as being free of subjectivity (Ravitch & Carl, 2016). The researcher should not try to influence the research or findings with his/her perspective. Additionally, the researcher should engage other colleagues who would challenge the research from a perspective that is different to that of the researcher (Ravitch & Carl, 2016).

Confirmability aims to ensure that the research is authentic. Korstjens and Moser (2018) explained that confirmability is that degree to which independent researchers can confirm the findings of the research. The objective of the confirmability process in qualitative research is to ensure that the results of the study are accurate and not fictitious (Korstjens & Moser, 2018).

In order to maintain confirmability and reduce the elements of bias and subjectivity, I conducted the interviews based on the instrument approved by the IRB. Extra questions were only asked when probing or seeking clarification. Additionally, I maintained a comprehensive reflective journal of the research process which captured all interview procedures for scrutiny.

Bleiker et al. (2019) outlined that an audit provides comprehensive records for qualitative research which can be used to establish trustworthiness. For this qualitative research, I maintained a detailed audit of all data collection activities and procedures. The

audit was used solely to enhance trustworthiness, and specifically for other researchers to ensure confirmability.

Ethical Procedures

I conducted this study among healthcare workers in Jamaica who are human subjects. Therefore, I applied to the IRB at Walden University for permission to conduct data collection. The study comprised a researcher-developed questionnaire which I administered. The risk of harm to the participants was very minimal since the study involved no physical or medical experiments or procedures. No rewards or tokens were provided for participation.

I obtained permission to conduct data collection from the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs. Initial contact was established with the ministry and provisional approval was granted to me for the data collection process. I submitted the formal request to the ministry following approval from Walden University and the IRB.

Ethical concerns are real and must be taken into considerations by researchers. However, it is difficult to identify and address all ethical issues that may arise in qualitative studies before the research begins (Øye et al., 2016; Stevenson et al., 2015). Ethical considerations include but are not limited to consent, harm, privacy, anonymity, the use of human subjects and vulnerable groups, and coercion (Øye et al., 2016; Stephenson et al., 2015). For this qualitative study I identified privacy and anonymity as ethical concerns.

Participants in qualitative research should be assured of their privacy (Hanson et al., 2011; Øye et al., 2016). I assured participants of privacy in the informed consent form that was presented to them. Additionally, the locations for interviews were selected by the participants to ensure they were comfortable, and that confidentiality was protected.

Participants' request for anonymity must be respected and preserved by researchers conducting qualitative research (Hanson et al., 2011). Participants in this research were assured of anonymity in the informed consent form. Participants were not required to provide demographics, but if they did, all information would have been kept confidential. Each interview was assigned a number instead of a name or other traceable identifying mark. The research report provided no means by which participants can be traced, therefore enhancing confidentiality.

Summary

This generic qualitative study explored how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. The main research question asked how healthcare workers in Jamaica perceived the effectiveness of the health disaster management plan. As a result, I used the generic qualitative methodology as the design foundation for this study. Additionally, I selected collective action theory as the most appropriate theoretical framework for this research.

I conducted this research among healthcare workers in Jamaica using a researcher-developed, semistructured interview instrument. Participants must reside in Jamaica and must have experienced a hurricane in the past 15 years. They should have

used the *Ministry of Health Procedures Manual No. 7, Disaster Management* in response to a hurricane or other emergency.

I conducted a pilot study for this research which tested the interview instrument so it could have been refined and enhanced where necessary. I did not include the results of the pilot study in the final report. All data collected in both the pilot study and the formal interviews were confidential.

The data were analyzed using thematic analysis. I ensured trustworthiness by paying attention to credibility, transferability, dependability, and confirmability. All ethical procedures were approved by the IRB.

The procedures outlined in this chapter were used to guide the data collection and analysis processes. The results of the data analysis was used to inform the narrative for Chapters 4 and 5. Chapter 4 will be dedicated to reporting the results.

Chapter 4: Results

The purpose of this generic qualitative study was to explore how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I collected data for this study through the use of 15 individual, semistructured interviews. The interviews with healthcare workers in Jamaica yielded rich data which provided perspectives to the research questions. The primary research question for this study was:

How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?

The subquestions for this study were:

1. How do healthcare workers in Jamaica describe using the health disaster management plan during emergencies?
2. How do healthcare workers in Jamaica perceive revisions to the health disaster management plan following emergencies?
3. What experiences have healthcare workers in Jamaica had that will either encourage or discourage their use of the health disaster management plan?

I begin this chapter with a description of the pilot study. I then provide insight into the setting for the study. The data collection process will be described in detail. This will be followed by a thorough perspective on the procedures used for the thematic data analysis method. The chapter continues with a discussion on issues of trustworthiness which will emphasize credibility, transferability, dependability and confirmability, which

were introduced in Chapter 3. I then present the results of the study, organized according to the emerging themes. The chapter concludes with a summary of the material presented.

Pilot Study

Pilot studies are conducted to provide researchers with a foundation from which to plan and execute the actual study (Larsen et al., 2018). The pilot study is a procedure used to examine the data collection instrument carefully, with the aim of revising and enhancing the quality of the actual data collection process (Doody & Doody, 2015; Ravitch & Carl, 2016). The pilot study can identify strengths and weaknesses that the researcher can expect in the main study (Doody & Doody, 2015). Ultimately, the researcher can use the results of the pilot study to make adjustments to the data collection process.

At the beginning of the data collection process for this study, I conducted a pilot study with two participants who were selected based on the inclusion criteria. I aimed to test the interview instrument with the objective of refining and enhancing the document if necessary. I conducted the pilot study to make observations to guide any changes that may have been necessary in my approach to conducting the interviews.

I obtained the names of two potential participants for the pilot study from my contact person in Jamaica. I contacted the potential participants and requested their participation. They both agreed and the consent form was shared with them. Both participants gave consent by email to participate in the interviews.

I conducted the interviews for the pilot study by telephone. The two participants were asked the same questions that were prepared and used for the main study. I

transcribed the data that were collected in the pilot study but I did not analyze or use it as part of the main study.

The pilot study revealed no challenges with the instrument nor the approach to the interviews. The participants experienced no difficulties in responding to the questions as outlined in the interview protocol. Additionally, I experienced no challenges executing the interview process. Therefore, there was no need to make any adjustments to the interview protocol that was initially approved by the IRB.

Research Setting

I conducted this research with healthcare workers from Jamaica who experienced an emergency or disaster on the island and had to use the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response. There was no age or gender requirement for participants. Additionally, participation in the study was completely voluntary.

I conducted interviews by telephone using WhatsApp or direct calling. In instances where the Internet connection was poor, I selected to use direct calling instead of WhatsApp. The participants incurred no service charges.

There were no circumstances or research changes that influenced the participants' experiences in this study. Each participant sent me an email through which they provided informed consent to be interviewed. Following receipt of informed consent, I arranged the dates and times to conduct the interviews.

Demographics

I used the snowball sampling method to recruit participants for this study. Snowball sampling is used when the researcher wants to protect the privacy and confidentiality of participants (Waters, 2015). I selected participants for this generic qualitative research from among healthcare workers who reside in Jamaica, have experienced a hurricane in the past 15 years, and have had to use the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* for response. Therefore, I did not require participants to provide demographics such as age, gender, address, length of service, or marital status.

Data Collection

I obtained permission to conduct the study with healthcare workers in Jamaica from the Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs. I was then granted permission by the Walden University IRB to conduct the study. Next, I began the data collection process.

I selected participants for this study from among healthcare workers in Jamaica. Since most healthcare workers in Jamaica are government employees who would prefer to maintain confidentiality and privacy, I selected the snowball sampling technique for recruitment. According to Waters (2015), the snowball sampling technique is best used when members of the population prefer not to be identified.

Based on the inclusion criteria used for this study, I obtained the names and email addresses of potential participants. I contacted the individuals by email to request their participation in the study. Many of them contacted me by WhatsApp to discuss the details

of the study. Consequently, I asked then to suggest other potential participants. This process continued until I recruited 19 potential participants.

I live in Grenada and the participants for the study live in Jamaica. Based on travel and other restrictions related to the COVID-19 pandemic, I could not travel to Jamaica to conduct face-to-face interviews. Therefore, I conducted interviews electronically.

The recruitment process was time-consuming and tedious. It required frequent follow-up emails and many telephone conversations explaining the details of the study. Additionally, there were many instances where interviews were rescheduled and some were cancelled. Some potential participants refused to participate, citing reasons such as time constraints, and lack of knowledge of the subject. A few potential participants provided no reason for their refusal to participate. There were a total of 15 interviews conducted for this study over a period of 40 days.

I conducted all 15 interviews by direct telephone calls or WhatsApp. I used a hand-held device to record interviews. I estimated each interview to last between 30 and 40 minutes. However, the interviews ranged from 8:35 minutes to 35:19 minutes in duration. Table 1 provides the times for the interviews and Table 2 provides the codes for the interview questions.

Table 1

Duration of Interviews

Interview Number	Duration
001	23:46 mins
002	18:56 mins
003	27:49 mins
004	21:36 mins
005	29:15 mins
006	25:58 mins
007	32:43 mins
008	18:26 mins
009	23:00 mins
010	15:07 mins
011	14:46 mins
012	26:47 mins
013	8:35 mins
014	26:11 mins
015	35:19 mins

Table 2

Codes for the Interview Questions

Question Number	Question Codes
1	Q001a
Probing Question	Q001b
2	Q002a
Probing Question	Q002b
3	Q003a
Probing Question	Q003b
4	Q004
5	Q005
6	Q006a
Probing Question	Q006b
7	Q007a
Probing Question	Q007b
8	Q008
9	Q009a
Probing Question	Q009b

The participants were free to select the location at which they were comfortable to be interviewed. The data were collected in accordance with the plan stipulated in Chapter 3. I observed no unusual circumstances during the data collection process.

Data Analysis

At the beginning of the data analysis process, I conducted member checking. I submitted the transcripts to the participants by email for verification. One participant recommended minor adjustments to the transcript.

I utilized the thematic analysis process to analyze the qualitative data collected for this study. Braun and Clarke (2012) explained that thematic analysis identifies commonalities in qualitative data and aims to provide meaning relevant to answering the research question/s. Thematic analysis is characterized by six distinct steps: (a) familiarizing yourself with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing potential themes, (e) defining and naming themes, and (f) producing the report (Braun & Clarke, 2012).

The data I used for the thematic analysis process consisted of 15 transcripts generated by interviews conducted using a semistructured questionnaire. The data were transcribed verbatim, and used for analysis without alterations. The aim of thematic data analysis is to use an organized technique to describe meaning in data (Braun & Clarke, 2012).

Braun and Clark (2012) explained that the first step in thematic analysis is where the researcher becomes familiar with the data. The familiarization process includes coding the data to ensure confidentiality, transcribing the data, reading the data several

times, and making copious notes. In addition, familiarization includes precoding, which is making notes of outstanding quotes or statements made by research participants (Saldaña, 2016).

During the familiarization process I assigned a numeric code to each participant. I transcribed each interview manually. The use of transcribing software proved futile, as Jamaicans speak a unique dialect. Transcribing the data manually was very time-consuming. However, it provided me with an opportunity to listen to the recordings several times and make notes. While listening to the recordings, I checked for errors in the transcripts. According to Moser and Korstjens (2018), researchers should immerse themselves into qualitative data to find relevant meaning. I listened to the recordings of the interviews and read the transcripts several times. I continued this process until I was satisfied that I had immersed myself adequately into the data.

I engaged in precoding during the familiarization process. Saldaña (2016) explained that researchers can precode data by taking note of outstanding quotes made by participants. These quotes can be used during analysis and reporting.

The next step of the thematic data analysis process was generating codes. Braun and Clarke (2012) described this stage as one where the researcher initiates a detailed procedure to bring meaning to the data by attaching words and phrases to portions of the narrative with the intention of linking them to the research question/s. Additionally, Saldaña (2016) explained that a code is a word or phrase that represents the essence of a segment of data.

I entered the transcribed data into a Microsoft Excel file in which each interview was placed on a separate sheet. I then began the formal coding using process coding. Saldaña (2016) explained that process coding seeks to imply actions that occur in sequence over time.

This generic qualitative study was grounded in collective action theory. Degli Antoni (2016) explained that collective action theory is based on the principle of public goods being produced through collective actions for the benefit of everyone. As a result, process coding, which refers to actions that occur in sequence over time such as the implementation of a plan, was best suited for the data analysis.

I read each interview and assigned codes to the data based on the interview questions. The codes were assigned using quotes from the participants. According to Saldaña (2016), process coding is used when individuals act or interact toward a particular goal or solving a problem. The use of the *Ministry of Health Procedures Manual No. 7, Disaster Management* requires individuals to work together toward solving a problem. Therefore, process coding was appropriate for the data analysis.

According to Saldaña (2016), descriptive coding uses a word or short phrase to summarize chunks of qualitative data. Saldaña (2016) also explained that in vivo coding uses words or phrases to represent passages of data. Very often, the words and phrases used in in vivo coding are taken directly from the text. In addition to process coding, I used descriptive coding and in vivo coding during the data analysis for this generic qualitative study.

At the end of the extensive coding process, I began to group and categorize the codes. I examined the codes carefully, and placed them into categories based on their common themes. This process was conducted several times to ensure that the codes were placed into the correct groups or categories.

The categorization process led to the emergence of initial themes. Each category of codes had a common theme which was identified by a word or short phrase. I examined the emerging themes closely and grouped them based on common ideas. The groups of themes were examined several times to ensure they were placed in the correct groups. According to Saldaña (2016), themes are identified after coding and categorizing the data. Saldaña (2016) explained further that theming aims to use phrases or sentences to align meaning to codes or categories.

I examined the initial themes several times to ensure they reflected the codes and categories that were generated through previous steps. Braun and Clarke (2012) explained that this process seeks to verify that themes and data are matching and that themes are meaningful. During this process, the researcher is trying to ascertain coherence between themes and data through codes and categories. The process can lead to merging, splitting, or discarding themes.

When I was satisfied that the themes reflected the codes and categories that were generated, I began the process of grouping the themes. I examined the themes that reflected similar meanings and grouped them to ensure alignment. At the end of this verification and alignment process, I achieved six main themes. The six themes were: (a) the plan as a guidance manual, (b) knowledge of the plan, (c) the plan is effective for

healthcare workers, (d) plan review process, (e) experiences with the plan, and (f) revise and continue use of the plan.

At this stage, I reviewed the themes to ensure that they reflected the data I immersed myself into earlier. I was satisfied that the themes were truly reflective of the data, and I began assigning meaning to each theme. I did this by ascribing a few sentences which described the essence of each theme. Braun and Clarke (2012) explained that substantial themes should have a specific focus toward addressing the research question. Each theme should be described using a few sentences and should provide a cohesive perspective about the data (Braun & Clarke, 2012).

At the end of the coding, categorizing, and theming processes, I began preparation for the final report. I used the codes and categories to reflect the frequency of participants' quotes and references to specific topics. These will be reflected and represented in the results. Braun and Clarke (2012) explained that the final report should provide answers to the research questions.

Evidence of Trustworthiness

Credibility

According to Ravitch and Carl (2016), credibility is the ability of the researcher to convince others to trust the results of the study. The research design, sampling strategy, alignment of methods with the research questions, and the richness of the data collected are used by researchers to established credibility (Ravitch & Carl, 2016). For this study, I employed several methods, outlined in the following paragraphs to establish rigor.

The dissertation committee approved the data collection protocol for this study. I then submitted the proposed study to the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs and it was approved. The IRB then granted approval to conduct the study. I followed Walden University guidelines throughout the research process.

Pilot studies are used to evaluate data collection instruments to establish validity (Doody & Doody, 2015). I conducted a pilot study to verify the appropriateness of the data collection instrument. The pilot study was used to enhance credibility.

I documented the data collection and analysis processes using a journal. I also recorded the major activities related to data collection and analysis on a daily basis as a method of supporting and enhancing credibility. Liao and Hitchcock (2018) explained that accountability is achieved through documentation which is used to strengthen credibility.

During the data collection there comes a point when interview participants can provide no new information to the interview questions. Hagaman and Wutich (2017) defined this stage of the interview process as data saturation. I perceived that data saturation was achieved at interview number 12. However, I conducted 15 interviews to ensure that data saturation was indeed achieved at interview 12. I used data saturation to establish and enhance credibility for this qualitative research.

Member checking is a procedure where researchers share the transcripts with interview participants for verification purposes (Liao & Hitchcock, 2018). Birt et al. (2016) explained that member checking is used so that participants can add or delete data

and make corrections and clarifications if necessary. Member checking also aims to enhance the accuracy of the data. I engaged in member checking for this qualitative study. Participants reviewed and made adjustments to the transcripts. I used the member checking process to enhance credibility.

Transferability

Transferability is the ability of researchers to use a qualitative study in a different context without variations to the originality and relevance of the study (Hanson et al., 2011; Ravitch & Carl, 2016). In addition, transferability allows readers to apply the results of the study to situations which share similar contexts to that of the one in which the study was conducted. Transferability aims to allow researchers to apply the research procedures and results to a similar environment without changing the context of the study (Hanson et al., 2011; Ravitch & Carl, 2016).

Thick description is often used in qualitative studies to obtain transferability. According to Cook et al. (2016), thick description is a thorough account of the context of qualitative research. Thick description, if used properly, provides the context for other researchers to decide if a study is appropriate for another context (Creswell & Miller, 2000).

I used thick description to document the steps and procedures followed in this qualitative study and to enhance transferability. This was achieved through the use of a detailed journal. I used the journal to document the details of the data collection and analysis processes. I used particulars from the journal to enhance thick description throughout Chapters 4 and 5. The journal also served as an audit document.

The participants in this study provided rich and detailed descriptions of their experiences with the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. These experiences are outlined in detail in Chapters 4 and 5. The quotations provided from the participants in Chapters 4 and 5 enhance thick description which I used to strengthen transferability.

Dependability

Dependability is the level of rigor which ensures the study is designed to enable it to answer the research question(s) with reduced or minimal possibilities of challenges from other researchers. Ravitch and Carl (2016) explained that dependability guarantees the precision of the study design, data collection, and data analysis. The measures established to secure dependability should eliminate uncertainty about the consistency and stability of the data in answering the research question(s). (Ravitch & Carl, 2016).

I selected to establish an audit trail to achieve dependability for this generic qualitative study. Forero et al. (2018) explained that dependability is possible through the use of a reliable research audit. According to Creswell and Miller (2000), an audit provides categorical details of the research process and can be done through journaling.

I procured a journal to create the audit trail from which I intended to establish dependability. I recorded all details of activities which included the process to obtain permission to conduct the study in Jamaica, the IRB approval process, the pilot study, and the recruitment and interview processes.

The detailed journal records were used to conduct self-audit of the research process. The journal and electronic records of the study will serve as audit instruments

for other researchers who wish to audit the study for dependability. The records in the audit will be kept for at least 5 years, based on Walden University requirements.

Confirmability

Qualitative research can be influenced by researcher bias. Several elements of the research such as data collection, interview process and data analysis can be impacted if bias is not removed from the process. Ravitch and Carl (2016) explained that the qualitative researcher is connected to the study and therefore this connection must be addressed in a systematic way to ensure it does not influence the results. Therefore, steps need to be taken very early in the research process to reduce or eliminate bias and subjectivity.

I aimed to maintain confirmability and reduce bias and subjectivity in this generic qualitative study. To achieve this, I conducted the interviews based on the instrument approved by the IRB. I asked additional questions only for clarification and probing purposes. Korstjens and Moser (2018) explained that the objective of confirmability in qualitative research is to guarantee that the results are accurate and not fictitious. Consequently, I followed the guidelines approved by the IRB meticulously.

I maintained a detailed journal as an audit tool to achieve an additional measure of confirmability. Bleiker et al. (2019) explained that an audit instrument can be used to establish trustworthiness. Therefore, the journal enhanced trustworthiness and can be used by other researchers to ensure confirmability.

Study Results

The data collection instrument consisted of nine main questions and five probing questions. These questions, as outlined in the interview protocol in Appendix A, were designed to obtain responses from the participants to answer the central research question and three subquestions.

The data collected for this generic qualitative study were analyzed using thematic analysis. In my analysis of the data, I observed six main themes related to the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. I present the results organized according to themes in the following section.

Theme 1. The Plan as a Guidance Manual

Interview question number 001a asked participants to describe their experiences with the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* Participants had varying experiences with the use of the health disaster plan. Most of the responses to this question were related to theme one.

The plan was described as a guidance manual and a response document which provided a foundation upon which healthcare workers could build their emergency response experiences. The plan was also described as easy to understand and use, and simple to follow. Participant 004 described the plan and stated “It’s a straightforward manual. It’s not bulky. It’s not a whole lot of laborious reading. And so it is something that you can utilize as you go along for references in your everyday duty.” Participant 004 added “I find it is easy to understand and to manipulate. It is very useful to me because it gives a description of my responsibilities.” Another Participant, 011, supported

the first theme and said “It’s very easy to follow. There are a number of persons contributing to this manual and I think it is a good guidance document for all concerned to follow.”

Overall, participants thought the plan encompassed the responsibilities of both the Ministry of Health and government as it relates to healthcare. Participant 010 said “I know we utilized it during the Chic-V and ZICA outbreak and we are now utilizing it during the COVID-19.” This statement supported theme one, which states that the plan is a guidance manual.

Participant 015 reported that the plan was used as a base for contingency plans that related to healthcare. The participant said:

> So the fact that it is and that it was a multi-stakeholder participatory process to developing the document, means that if factors the different nuances of the system and that makes it a lot more acceptable, especially if we have to do staff changes. The way the manual is written as pointed out, because it’s done in such a way that it’s based on contingency and then there’s a standard.

While participants accepted the plan as a guidance manual for healthcare workers, there were four who claimed that although they used the plan for response, they did not know the plan sufficiently. Participant 002 expressed that interaction with the plan was limited and stated “Well my personal exposure in terms of the specific details in the plan are limited.”

The responses to Q001a provided perspectives of healthcare workers about how they perceived their use of the health disaster plan. Participant 015 summarized the

responses and stated “that’s the manual that was presented to me as the foundation guiding document for all our activities.”

Theme 2. Knowledge of the Plan

The supporting data for the second theme were provided in the responses to Q002a and Q002b. There were varying responses relating to participants’ knowledge of the plan. Seven participants claimed to know the plan very well. For example, Participant 006 explained that as a member of staff of the emergency services, it was necessary to know the plan. Participant 006 said “As a member of staff with the Emergency Disaster Management and Special Services Branch, I definitely would have had to know this manual.” Seven participants claimed to have good knowledge of the plan but thought they needed to know it better. For example, Participant 011 stated “My knowledge out of 10, I give a 6.”

Itzwerth et al. (2018) advised and encouraged knowledge of the entire health disaster plan. However, no participant claimed that it is mandatory to know the plan. Participant 013 said “There are snippets of the plan that I know about.” Participant 013 went on to say “I am knowledgeable about the specific areas that I have to respond to.” This statement by Participant 013 indicated that there were healthcare workers who focused on the specific areas of the plan that related directly to their area of responsibility.

Acquiring knowledge of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was important but there were different modes through which that knowledge was obtained. Thirteen participants reported that they obtained

knowledge of the plan through trainings, exercises, briefings held either before or after responses to emergency events, and by reading the plan. For example, Participant 005 claimed to have read the plan and said "I had read the contents of the plan" which was how knowledge was obtained. Participant 009 echoed this and said "when the plan was developed, you have different training sessions that you have to attend, so as to be familiar with the plan." This participant acquired knowledge of the plan through training sessions.

The responses to Q002a and Q002b provided perspectives of the participants about effectiveness of their knowledge of the plan. The main responses were that participants' knowledge of the plan was effective for their use of the plan and response to emergencies. However, there were seven responses which indicated that participants claimed to have limited knowledge of the plan, while two participants expressed that they knew very little about the contents of the plan. Participant 001 said "Generally speaking, the knowledge of the plan itself is very limited." While 10 participants claimed that their knowledge of the plan was effective for response, there were four who expressed that training, exercises, and practice were necessary to enhance their knowledge of the plan.

Theme 3. The Plan is Effective for Healthcare Workers

I used the central research question to ask how healthcare workers in Jamaica perceived the effectiveness of the health disaster management plan. The following three questions in the interview schedule directly related to effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management,* and the responses were used to inform theme three:

Q002b. Was the knowledge effective for your preparation for an emergency or disaster?

Q003a. Describe how effective you think the plan is in assisting individual healthcare workers to prepare for emergencies/disasters?

Q004. Describe how effective you believe the plan is in assisting the healthcare workforce to prepare for emergencies/disasters?

All participants agreed that the plan was effective. For example, Participant 007 stated "Absolutely it is effective because it gets down to the individual health worker." No participant claimed that the plan was ineffective. However a few participants had suggestions as to how the plan could be enhanced and made more effective. For example, Participant 002 stated "I think it has to be more of a capacity building approach." Participant 011 suggested that the plan should address sustained emergencies such as COVID-19 and stated "what the document doesn't really speak to is the sustained response that is needed by the healthcare workers."

All participants agreed that the plan was effective for preparing individual healthcare workers for emergency response. Additionally, all participants expressed that the plan was effective for preparing the general healthcare workforce for response to emergencies. This was stated 17 times throughout the 15 interviews. For example, Participant 007 said "Absolutely it is effective because it gets down to the individual health worker on the ground." Another Participant, 014 said "The plan is very effective to help the general workforce to properly handle the situation when it arise so they are aware of what step to take in the verge of an occurrence." These statements supported the

perspective that the plan was effective in preparing individual healthcare workers and the general healthcare workforce for emergencies.

While all participants agreed about the effectiveness of the plan, there were opinions that proposed enhancement of the document. The involvement of workers in creating and updating the plan, adequate capacity building for effective delivery, and more frequent trainings and exercises were some of the suggestions. In support of these opinions, Participant 004 said "Perhaps more can be done in terms of preparing individuals. Some more can be done where that is. There is a level of effectiveness but of course there is room for improvement."

One of the concerns of participants was access to the document. In its current state, the plan is paper-based and not accessible using the internet. Participant 015 expressed the view that healthcare workers should have access to electronic copies of the plan at all times. Participant 015 complained and stated "because it was very paper-based, has been the biggest bug there for us."

The issues of staff turn-over, transfers, and other movements of staff for various reasons were raised as concerns for participants. Staff changes required replacements, and most of the times, the new persons were not familiar with the contents of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. Participant 008 stated "because of that rapid turn-over you need to have an operating procedure that you can rapidly consult." Participant 002 added "So I think that spoke to the need for more exercising, more orientation around the plan, and more exercises." Participant 002 went on to say "So that needs to be a part of it as well as the ongoing orientation, and the

scheduling of these training exercises." The two Participants, 002 and 008, were of the view that an orientation plan should be established so all new staff will become familiar with the contents of the plan very early in their duty.

Participant 004 noted that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was written after a major hurricane impacted Jamaica in 1988. Participant 004 stated "This plan came about when there was a major hurricane in Jamaica, Hurricane Gilbert in 1988." The participant was of the impression that the plan focused mainly on hurricanes and other short term emergency events. Participant 011 supported Participant 004 and said "It's very good in preparing them for short term emergencies such as sudden onset disasters, you may have hurricanes or earthquakes, whatever. What the document doesn't really speak to is the sustained response needed by the healthcare workers."

Participant 011 expressed that "what we're now experiencing is a huge staff burn out in country and of course persons becoming sick with COVID-19. So the document really doesn't speak to the sustained efforts you would see like in a case like this." The participant was of the view that the plan should address long term and sustained emergencies such as COVID-19.

The responses to the interview questions which supported theme three have indicated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* is effective. The responses also indicated that the plan should be revised and enhanced.

Theme 4. Plan Review Process

One of the research subquestions addressed how healthcare workers in Jamaica perceived revisions to the health disaster management plan following emergencies. The responses that supported this theme also supported this research question. The participants provided perspectives to this theme when they answered Q006a and Q006b.

According to Ahmed (2016), the revision of a healthcare disaster plan should be periodic, and should aim to identify gaps and make recommendations for enhanced response in the next disaster event. Participants in this study were asked if the plan review process for the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was effective.

Seven participants agreed that the plan review process was effective, while eight participants reported that the plan review process was both effective and timely. Fourteen participants stated that the plan review process resulted in revisions of the plan and related training materials. Participant 007 remarked "I think the plan review process is effective because we normally do debriefings and post disaster report looking at what worked and what didn't work." Participant 014 focused on training and stated "checking the responders to see how they had respond to the situation. And probably review the training material, the training process to see if you need to update the material."

Participant 001 stated that the plan review process was not effective, and that it needed to incorporate more response entities. Participant 001 said "but I think that review process could benefit from a more targeted approach in terms of how the reviews are conducted with participation from outside the institutions. With a wider participation."

While participants agreed that the plan review process was effective, there were a few who added conditions to their responses. For example, Participant 015 was of the view that plan reviews should continue to be conducted in real-time, and should be an on-going process. Participant 015 supported this by saying "so different, every time we have to respond, there is usually an area that benefits from updating and that's done real time."

Additionally, there was the opinion that the review should be frequent and continuous to reduce the instances of conflicting interpretation of components of the plan. Also, there should be an approach where sections of the plan are updated immediately following specific disaster events. Participant 009 supported this and said "because you see you don't want to be waiting too long for the documentation and a wash out, a debriefing to take place, so immediately after that operation you want to have that debrief."

Fourteen participants expressed that the plan review process was used to identify gaps, weaknesses, strengths, challenges, and best practices. Participant 011 explained "we change doctors, SMO's. Regional and technical persons may change and certainly there should be clear documentation of good practices, best practices and what ought not to have happened." Participant 006 added that the plan review process measured performance based on procedures, and aimed to make improvements for future response actions. Participant 006 stated "lessons can be learnt from those meetings. Definitely a must to have such meetings that gives you a wealth of knowledge in terms of how did we do how did we measure up based on the procedures and protocols."

The plan review process helped to identify challenges so corrective measures can be taken to reduce or eliminate repeat of the challenges in future disaster response activities. Participant 007 supported this view by saying:

> I would say so. I would say they are effective, because usually if something never work so well this time, by the next time we need to do it, it has been corrected, if you get what I'm saying. And we try to find ways of improving so the next time around, whatever challenges we had we know that prior to we have to ensure that these things are in place.

Eight participants in this study indicated that the timeframes within which the plan reviews occurred were effective and reasonable. However, five participants expressed that there were times when the review was dependent on the nature of the disaster event and the length of time it took to return to normalcy to accommodate the review. Participant 010 supported this perspective and stated:

> And it's after that you would want to do that review because you want to get back to some level of normalcy. So I think it's relative to the incident that is happening. So the effectiveness I think can be measured based [pause] is relative. That is what I think, because its relative based on what is happening at the time.

The responses to Q006a and Q006b supported the fourth theme and revealed that participants were of the view that the plan review should be policy-driven and time-bound. The review should be close to the disaster event, and required immediate follow-up. In addition, there should be adequate dissemination of the updates to the plan so healthcare workers are aware of the updates for the next disaster event.

Theme 5. Experiences with the Plan

The emphasis of the fifth theme was participants' experiences with use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. This theme related directly to research sub-questions one and three which asked about healthcare workers' use of and experiences with the health disaster plan.

Healthcare workers have different roles throughout the healthcare sector and can be assigned duties at many different facilities. As a result, healthcare workers' experiences may vary across the healthcare system. Theme three captures experiences of healthcare workers in Jamaica with their use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*.

Participant 002 stated "The positive is always going to be that there is a plan, which defines how the ministry of health will operate and how it interfaces with its partners." This participant agreed that it was important for Jamaica to have a health disaster plan and that the existence of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was positive. The plan was used for response to natural and man-made hazards, and it was currently being used in response to the COVID-19 pandemic. Participant 004 added "So for now we do utilize it for what is happening, this COVID-19 pandemic, and so while it was created for a specific purpose, it has evolved."

According the Demming (2016), health disaster plans provide a framework with procedures and guidelines for response to disasters. These plans should include elements of preparedness, response, and recovery. Participant 015 stated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* served as a foundation for

healthcare workers. This participant said “that’s the manual that was presented to me as the foundation guiding document for all our activities.” Participant 006 supported this and stated:

> Using this plan, it’s almost like a textbook experience. So you are going through the disaster and as you go step by step, if you look at the book you realize that yes I am doing and they are following the plan.

Participant 006 agreed that the plan provided a step-by-step approach to response.

Participant 015 explained that the plan followed the Comprehensive Disaster Management approach as adopted by most Caribbean countries. This participant stated:

> It was almost mandatory for me to be familiar with it and to know how to operate even in routine times cause as you know we use the Comprehensive Disaster Management approach in country, so even when we are not responding, there is a framework within which we conduct out activities as a part of our disaster risk reduction strategy, in keeping with the model.

This statement supported the perspective of the plan’s alignment to other strategic documents.

Participant 002 stated that “there is a plan, which defines how the ministry of health will operate and how it interfaces with its partners.” Participant 003 was of the view that the plan was aligned to the Jamaica national disaster plan, and stated “We’ve responded, it dove tailed with the national plan, the national disaster management plan.” Additionally, the plan outlined the roles and responsibilities of various disaster sub-committees, and the interrelationships that existed among them. Participant 004 stated “It

tells you about the formation of the different committees; it tells you what the roles of each person are." This participant added "It also tells you the interrelationship between the three levels of management that are in the Ministry of Health."

Participants were asked in Q007b if they were encouraged or discouraged to use the plan. Eleven participants reported that they were encouraged to use the plan because it was the only plan that existed. Participant 013 stated "I have to be encouraged. Because it is the recovery and mitigation strategies." Participant 014 added "Well I am grateful for the plan. I am grateful for a structure that is designed to help health workers." The comments by these two participants supported the view that there was a structure in the plan which provided guidance to healthcare workers, and that the structure was effective. There was the perspective that the plan represented a high standard. Participant 010 supported this and stated "The positive thing is that it is a very well written document."

While 11 participants agreed that they were encouraged to use the plan, there were slightly different opinions among the other four. Some of the concerns were orientation and access to the document. Participant 001 stated "the absence of that orientation of the plan works sometimes in a negative sense." Participant 011 commented on access to the document and stated "the negative side is that not a lot of persons have access to it, and some efforts were made to digitalize the copy or copies and disseminate it widely."

Demming (2016) stated that health disaster plans outline procedures and guidelines for response to disasters. These guidelines should be standardized. Participant 015 was of the opinion that the language in the plan was subject to interpretation. The

participant explained that this could have led to confusion in implementation of the plan during emergencies. Participant 015 stated “for the documentation procedure, because it was very paper-based, has been the biggest bug there for us, generally speaking in terms of the plan. It has implications for interpretation and actual operation because of the documentation factor.”

There was no participant who indicated that they were not encouraged to use the plan. Participant 002 said “I was more encouraged to try and see how we can have better coordination, better intelligence on what the health sector plan calls for.” Eleven participants were encouraged to use the plan, and Participant 006 summarized the responses by saying “Most definitely it has encouraged because the plan, when you follow it you can’t go wrong, with the plan as it is set out.”

Theme 6. Revise and Continue use of the Plan

The sixth theme was informed by responses to Q008 and Q009a. These responses related to the central research question which asked about healthcare workers’ perceptions of the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*.

All participants expressed the view that the government of Jamaica should continue to use the plan. In support of this, one participant articulated that the plan was properly written and comprehensive. Participant 001 explained that gaps in response capability in the healthcare sector cannot be identified if there were no plan against which actions can be measured. This participant said the following:

> I think they definitely should continue to use it. I think that the plan has certainly served us well in terms of how we respond to various events. We certainly do have areas for improvement and I say it is so because even if we are to look at identifying these areas for improvement without having a plan in place in the first place and being able to benchmark where we are today or what was the set of procedures that were applied today, it's difficult to identify gaps in the absence of a plan. So I strongly would recommend that we continue to use it but that each time the plan has to be implemented we quickly, as quickly as it possible we review the process to see what can be improved and how can we do things differently.

While all participants agreed that the government should continue to use the plan, there were seven who expressed that the plan should be reviewed, revised, and updated frequently. An update schedule should be established so the plan can be kept current. Participant 012 explained that in an effort to ensure the plan was updated in a timely manner, response roles should be aligned with, and assigned to job descriptions of healthcare workers. This would ensure that health disaster management functions were carried out by assigned officers and not left to volunteers. Participant 012 said the following:

> Well what I think, I think we need to segment the plan per discipline or categories of people, even though you have a overarching plan you need to have people within their discipline being in the plan to say this is what is your role, your responsibility inside the plan and it gives them practical things as simulation, and

> they have to see how they tie in to the entire plan so each component how exactly you tie in. But you want to drill down so that you almost having them being trained in doing the simulation, taking it as an institutionalized part of the culture, part of how you function, getting them to do that, because people change behavior when things become repetitive yet interesting and people know that it's a requirement and it's not an option to your job but it's a requirement.

Training and exercises were identified as important to the successful implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. Participant 002 stated "the plan must have executive level orientation and training, even from a political level into the senior operation level and technical. So that needs to be a part of it as well as the ongoing orientation, and the scheduling of these training exercises will lend itself to improved knowledge and awareness of the plan and what it speaks to and how." This participant supported establishment of a schedule for trainings.

Participant 002 also supported the establishment of an exercising schedule. This participant said "A schedule. A plan needs to have a clear schedule and timeline for plan testing and exercising as part of the orientation or training and capacity building."

The plan should be available electronically so healthcare workers can have access to it at all levels. Participant 010 explained that the plan should be accompanied by a communications strategy which would ensure that all stakeholders received the relevant information about their specific functions. This participant said, "I think sharing it with

the response agencies is a good thing." The participant added "I think more sensitization on the use of the plan and what the plan is used for may be a good thing."

The use of Information Communication Technology was highlighted as an important component of the effective use of the plan. Participant 015 explained that stakeholders should embrace the use of Information and Communication Technology to ensure the efficient and effective functioning of the plan. This participant said:

> Well I think what I'll come to and my personal thing has been to leverage information. ICT. Information and Communication Technology to support the plan. Largely again because it allows for redundancy which we find is critical to disaster response, cause there must be some degree of redundancy. It also allows for back-up systems which is critical.

All participants supported the continued use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. However, the document should be revised regularly, and orientations, trainings and exercising schedules should be established.

Summary

During the data collection process, I gathered information that provided perspectives geared toward answering the research questions. The data was collected by telephone using individual interviews with a semistructured interview instruments. All interviews were recorded using a hand-held recording device, and then transcribed manually in preparation for analysis. The transcribed data was coded and analyzed using manual analysis and Microsoft Excel.

I used the central research question to explore how healthcare workers in Jamaica perceived the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. The three research subquestions supported the theme of the central research question.

From the analysis of the data, I observed six main themes which were reported in the section on results. The participants provided detailed responses to the interview questions. There were 15 interviews of which there were no discrepant cases.

In Chapter 5, I provide discussion on the interpretations of the findings. I will also provide discussions on limitations and outline any changes that were made. There will be a discussion on recommendations based on the interpretation of the results. Chapter 5 will end with a discussion on the potential impact of the study for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this generic qualitative study was to explore how healthcare workers in Jamaica perceived the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I collected qualitative data using 15 individual, semistructured interviews. The primary research question for this study was: How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?

The subquestions for this study were:

1. How do healthcare workers in Jamaica describe using the health disaster management plan during emergencies?
2. How do healthcare workers in Jamaica perceive revisions to the health disaster management plan following emergencies?
3. What experiences have healthcare workers in Jamaica had that will either encourage or discourage their use of the health disaster management plan?

I selected participants and collected data from healthcare workers in the healthcare sector in Jamaica. The participants experienced a hurricane while working in the healthcare sector in Jamaica in the last 15 years and have used the *Ministry of Health Procedures Manual No. 7, Disaster Management* in their response. I used the generic qualitative design which was most appropriate for this research. The data were analyzed using the thematic analysis approach. I reported the results of the study in Chapter 4, while interpretation and recommendations will be reported in Chapter 5.

Summary of Key Findings

I summarized the main findings of this study into six themes which encompassed the perspectives of healthcare workers in Jamaica about the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. The six themes were: (a) the plan as a guidance manual, (b) knowledge of the plan, (c) the plan is effective for healthcare workers, (d) plan review process, (e) experiences with the plan, and (f) revise and continue use of the plan. The themes provided the foundation for reporting the results of the study. Additionally, the themes informed the analysis of this study.

The main findings indicated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* serves as a guidance manual for the healthcare sector. The participants claimed to have varying degrees of knowledge of the plan, but agreed that the plan was effective for the performance of their duties. Additionally, the plan review process was described as effective but the timeliness could be improved. The participants claimed to have good experiences with the plan which encouraged them to continue to use of the plan. Moreover, participants were of the opinion that the government of Jamaica should review and revise the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management,* and continue to use it.

Interpretation of Findings

I applied a generic qualitative approach using Ostrom's collective action theory to examine the perspectives of healthcare workers in Jamaica about the use of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. Collective action theory

focuses on the benefits of the production of public goods (Ostrom, 2000). The theory implies that the goods and services are produced by a group for the consumption and benefit of the whole society (Degli Antoni, 2016). According to Buchanan and Yoon (2012), those who benefit from goods and services produced through collective action are not able to refuse the assistance provided to them.

This study focused on the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management,* which required collective action to be implemented. The implementation of the plan benefited the entire population of Jamaica. Therefore, collective active theory was best aligned to this study.

The participants were of the opinion that the plan was necessary for healthcare disaster planning and response, and that it provided guidance for healthcare workers as they carried out their duties. The healthcare response plan required the efforts of several stakeholders in the healthcare sector and other sectors to be successfully implemented. Therefore, the effective implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* can best be described by the principles of collective action theory as proposed by Olson (Ostrom, 2000).

There was a weakness in Caribbean countries' ability to respond to natural and man-made health emergencies and disasters in the 1970s (Ugarte et al., 2018). As a result, the countries requested assistance from the Pan American Health Organization to strengthen their capacities. The Ministries of Health of Caribbean countries established a goal to strengthen capacities between 2016 and 2021 by developing comprehensive healthcare emergency plans (Ugarte et al., 2018).

The participants identified the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* as the document which guides the emergency functions of the healthcare sector in that country. All participants agreed that the document was effective and the government of Jamaica should continue to use it. In addition, nine participants were of the opinion that the plan was a foundation document. These perspectives by healthcare workers provided a positive response to the central research question.

The impact of hazards can disrupt the normal functions of society (Francescutti et al., 2017). The healthcare sector is vulnerable to these disruptions and therefore requires the establishment of comprehensive health disaster management plans. Eleven participants in this study stated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* serves as a manual for health disaster response while all participants agreed that the plan is effective. For example, Participant 007 stated "So it is almost like it is a part of us. It prepares the workforce in a comprehensive way," and Participant 015 described the plan as robust and added "that I believe is probably the biggest win because it has proven itself to be robust."

Health disaster managers have a responsibility to ensure that healthcare workers are prepared to do their jobs. According to Savoia et al. (2014), exercises are essential to healthcare preparedness programs. Additionally, exercises are a part of the training that healthcare workers should receive to enhance their abilities to respond to emergencies and disasters.

Participants in this study identified training as a critical component of the healthcare system in Jamaica. For example, Participant 005 said "Well I do know that they do simulations and they do exercises and there is constant training of healthcare workers to different hazards." This statement suggested that trainings and exercises were given high priority in the healthcare system in Jamaica. However, Participant 008 expressed the view that there was room for improvement and stated, "we have rapid turn-over of staff so it is a constant to ensure that people are aware of the disaster plan, that you have enough training exercises. There's just never enough." This statement suggested that the current training program in the healthcare sector should be enhanced.

Vulnerable populations such as the elderly and persons with disabilities are at greater risks when there is a health emergency or disaster. According to Horner et al. (2018), it is vital to provide essential services to vulnerable populations during crisis periods. Horner et al. (2018) explained further that entities conducting health disaster planning should be very focused on special populations since they require additional attention and resources.

Although I did not focus on special populations in this study, Participant 007 paid particular attention to their needs. This participant stated:

> And I can give you the example with the pregnant woman, because when we realize that these are the things that are happening, before the hurricane reach, we go on the airways and we say if you are within 32 weeks upwards pregnant you need to find some low lying areas somewhere close to a hospital that you can go in the event you go into labor. Don't stay cross the river, because if the river come

> down, we don't know how to get to you; understand? So things like that. So we have to be proactive and try to improve on our response each time.

Participant 007 emphasized that it was important to ensure that healthcare workers established plans and made provisions for vulnerable populations. The plans for special populations should be finalized before hazard events, and there should be a communications strategy in place to disseminate the information. Special populations should be aware of the actions they should take to protect themselves when there is an emergency or disaster.

Healthcare workers are expected to report to work and provide services after a disaster or hazard event. A shortage of healthcare workers after a disaster can significantly reduce the services available to those who need it most (Salmani et al., 2019). Healthcare workers should be encouraged to develop self-care strategies in preparation for disasters (Quevillon et al., 2016).

The third theme focused on the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* being effective for individual healthcare workers and the healthcare workforce. Quevillon et al. (2016) emphasized the need for self-care among healthcare workers during preparedness planning. All participants in this study expressed support for the Jamaica disaster plan and its benefits for healthcare workers.

The results of this study indicated that healthcare workers were engaged in activities such as exercises, drills, and plan review meetings. Healthcare workers also met at appointed times to discuss the plan and their levels of preparedness for various hazards. These preparedness activities included self-care discussions and healthcare

workers had opportunities to ensure that as individuals they were prepared for response to hazards.

The fourth theme provided details about the opinions of healthcare workers regarding the plan review process. Seyedin et al. (2011) explained that the use of health disaster plans enhances the response capabilities of healthcare workers. According to Ahmed (2016), the health disaster plan should be reviewed periodically. The review should have a purpose, goal, and should be informed by scientific data. Additionally, the review should identify gaps which will be used to generate recommendations for enhancing the plan (Ahmed, 2016).

The results of this study indicated that the health disaster plan was reviewed at various levels and at different times. Additionally, the plan review process was described as effective, but there was need for enhancement of the process. The results also indicated that the plan review process was either timely or timely most of the times.

Participant 001 stated that the plan review process was necessary to identify gaps and make changes to improve the plan. This participant said "it's difficult to identify gaps in the absence of a plan." This can be interpreted to mean that there can be no plan review without a plan. The results of this study indicated that the plan review process was necessary and effective.

Collective actions by groups toward the benefit of whole communities is the foundation of collective action theory (Degli Antoni, 2016). In this study, I focused on the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* The plan required collective actions to be successfully implemented.

The results of this study indicated that the implementation of the health disaster plan required actions from healthcare workers and other stakeholders. The plan listed many stakeholders whose inputs were necessary for the success of the plan. The results of the study showed that stakeholders' participation was part of the collective action theory principle. The results also indicated that it was necessary for stakeholders to be integrally involved in the planning and review processes.

The central research question explored how healthcare workers in Jamaica perceived the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*. According to Francescutti et al. (2017), health disaster management plans are necessary for responses to health emergencies and disasters. Healthcare workers and stakeholders should be involved in developing and reviewing the plans (Haddow et al., 2014; Phillips, 2015). Additionally, healthcare workers should be provided with the tools that will prepare them to provide services during challenging periods when there is an emergency or disaster (Salmani et al., 2019).

The results of the study affirmed that the participants considered the *Ministry of Health Procedures Manual No. 7, Disaster Management* to be effective. The results also indicated that the existence of the plan was a positive expression that healthcare managers in Jamaica were aware of the importance of the document and its significance to the day-to-day functions of healthcare workers. Additionally, the plan served as a guidance manual for healthcare workers throughout the healthcare sector in Jamaica.

Research Subquestion 1 was used to explore perceptions about how healthcare workers in Jamaica described using the health disaster management plan during

emergencies. The results indicated that the participants of this study had positive experiences with the plan and they believed the plan provided guidance for their everyday functions. Additionally, the plan was used in response to several health emergencies and other emergencies that have health consequences. Nevertheless, the plan should be disseminated more widely using electronic means.

The second research subquestion probed into healthcare workers' perceptions about revisions to the health disaster management plan after emergencies. The results indicated that the plan was used to respond to emergencies and disasters in Jamaica, and that the plan review process was timely and effective. Five participants stated that the plan review process was effective sometimes. There was no participant who claimed that the plan review process was not effective.

While most participants agreed that the plan review process was effective, there were views that there should be adjustments both to the timeframe within which it was done and the frequency of the reviews. The results indicated that the reviews should be time-bound and policy-driven. This meant that a policy should be established to guide the review of the plan. Furthermore, the results implied that the plan review and revision processes should be enhanced.

The third research subquestion asked about experiences that healthcare workers have had with the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* which may have either encouraged or discouraged their use of the plan. The results revealed that participants believed the existence of the plan was a positive indication that there was a manual to guide them in the performance of their duties.

Without the plan, healthcare disaster response would be openly disorganized and healthcare workers would be left with no formal, documented guidance.

While the results indicated that participants were encouraged to have the plan, there was room for improvements in the document. The plan provided guidance for emergency response, but there was need for an increased levels of orientation, trainings and exercises for healthcare workers and stakeholders. There was no participant who indicated that they were discouraged from using the plan.

The six main themes identified from the data analysis were (a) the plan as a guidance manual, (b) knowledge of the plan, (c) the plan is effective for healthcare workers, (d) plan review process, (e) experiences with the plan, and (f) revise and continue use of the plan. These six themes all supported the perception that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was effective and that the study participants supported the use of the document. Each theme was supported by positive comments from the participants, however, there were comments that indicated that improvements were needed in each area.

Limitations of the Study

The limitations I identified in Chapter 1 were (a) unwillingness of prospective research participants to be interviewed, (b) cost associated with data collection, and (c) the research approval process in Jamaica. I was mindful of the limitations throughout the process and therefore advanced measures to mitigate the potential obstacles.

In Chapter 1, I explained that potential participants may be unwilling to participate because the research was based on perspectives about a government

document. There were no potential participants who refused to participate because they would be interviewed about a government document. Of the 15 interviews that were conducted, there were two participants who requested that I provide proof of permission to conduct the study from the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs. The other 13 participants provided consent to participate without requesting such documentation. Therefore, this limitation did not prove to be a significant challenge during the research process.

The cost associated with data collection was highlighted as a limitation. Costs included air travel, accommodation, local transportation, and meals. However, due to travel restrictions and safety concerns caused by the COVID-19 pandemic, I was unable to travel to Jamaica to conduct face-to-face interviews. Therefore, I conducted the interviews by direct telephone calls and WhatsApp. This eliminated all costs associated with travel.

The remote telephone interviews were conducted successfully. However, the remote mode did not allow me to see the participants. Facial expressions and body language can provide non-verbal cues to interviewers that they should either probe further or move away from certain issues (Beck, 2005). In this study, the remote interviews removed visual contact with the participants and therefore was a limitation.

The process to obtain approval to conduct the study in Jamaica was identified as a limitation. I submitted the application to the Jamaica Ministry of Health and Wellness Advisory Panel on Ethics and Medico-Legal Affairs, and it was approved in time to be

submitted as supporting documentation for IRB approval. This limitation was mitigated by early and timely submission of the application for approval to conduct the study.

Recommendations

The findings of this study revealed the need for additional exercises and trainings. The results also indicated the need for more orientation for staff and stakeholders. According to Savoia et al. (2014), exercises and trainings are used to measure the state of preparedness of the healthcare sector. Future studies should investigate the effectiveness of orientation, trainings, and exercises on the implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.*

Généreux et al. (2019) proposed putting knowledge into practice as a successful strategy for effectively transferring knowledge into practice. This requires active communication throughout the process. The results of this study indicated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* needed to be disseminated more widely among healthcare workers and stakeholders and that a communication strategy should be developed to address the gap identified with the transfer of knowledge. Based on this, future researchers should conduct studies to explore the effectiveness of a communication strategy for the implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.*

The results of this study indicated that there was need to enhance the plan review process. Ahmed (2016) outlined that plan reviews should have a goal and purpose and should be conducted periodically. The reviews should aim to identify gaps and make recommendations for enhancement. Additional research should be conducted to explore

the effectiveness of the review process outlined for the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* Future research should also focus on investigating the effectiveness of the timeframe within which the reviews are conducted.

Healthcare workers have specific functions throughout the healthcare sector. The results of this study suggested that healthcare workers should have specific health disaster management functions included in their job descriptions. The results also indicated that this recommendation, if implemented, could improve role definition and clarity. Further research should be conducted to determine the feasibility of including disaster management functions in the job descriptions of healthcare workers. Future researchers should also investigate how healthcare workers will accept having dedicated officers assigned to specific health disaster management roles and functions.

Implications

Health disasters present significant challenges for the healthcare sector. Healthcare workers and their families are impacted directly by disasters. According to Morris et al. (2016), disaster situations present major infrastructural challenges for healthcare workers. However, they are expected to overcome these challenges and provide healthcare services to meet the needs of impacted populations despite their circumstances.

The results of this study indicated that the Jamaica health disaster plan was used as a guide for healthcare workers. Participants agreed that the plan was effective, but should be reviewed and updated regularly and disseminated more widely. In addition, this

study established that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was used to identify gaps and measure performances in disaster response.

The findings of this study may be of importance to individuals, families, healthcare workers, and the population of Jamaica. This country is threatened by hurricanes each year and therefore, a comprehensive health disaster plan that is implemented with an effective communications strategy will benefit everyone. The results of this study can be used to support efforts to enhance the current plan. Healthcare workers and stakeholders should collaborate to ensure the plan benefits everyone, thus leading to positive social change.

This study was based on collective action theory. The successful implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* required collaboration from all stakeholders. This confirmed that the collective action theory was appropriately applied to the study. Additionally, collaboration among healthcare stakeholders for the benefit of the population will lead to positive social change for everyone.

The results of this study may be used to enhance health disaster management planning in Jamaica. The proper use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* can transform the way healthcare workers in Jamaica approach response to emergencies and disasters. This will ultimately result in enhanced delivery of healthcare services after a disaster. Therefore, this study confirmed that the use of the health disaster plan in Jamaica can bring about positive social change.

The findings of this research provided insights into how healthcare workers perceived the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* The findings may initiate discussions about ways in which healthcare organizations in Jamaica may be able to strengthen their operational capacities based on the results and the recommendations of the study. As a result, enhanced operations at healthcare facilities will benefit clients and result in positive social change.

The participants in this study identified the need for orientation and training in the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* at all levels. Since the plan applies to the functions of all categories of workers throughout the healthcare sector, it is important for orientation and training to be conducted regularly to ensure the majority of healthcare workers are familiar with the contents of the document. Increased knowledge of the plan will encourage enhanced emergency response which will therefore initiate positive social change.

The lack of use of Information and Communication Technology was identified as a weakness in the implementation of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* Policy makers should encourage the use of Information and Communication Technology for enhanced application of the contents of the plan. This will encourage and ultimately lead to positive social change.

Actions initiated by one group can effect social change at various levels in society. Similarly, actions taken by one country can result in social change in other countries. The results of this qualitative study which was conducted in Jamaica may be

adapted by other Caribbean countries in an effort to enhance their disaster management planning capacities. This will result in positive social change.

Conclusions

Health disaster management plans are used to support and guide healthcare workers in response to emergencies and natural and man-made hazards. Plans are also beneficial for continuity of healthcare operations after a disaster. In addition, it is important to have a healthcare disaster plan so it can be used to identify gaps in response and to measure performance.

Since the health disaster management plan is used as a guidance manual for healthcare workers, they should be knowledgeable about the contents of the document. Therefore, proper orientation and constant trainings are fundamental to the knowledge transfer process. This requires an effective communications strategy.

Health disaster management plans guide healthcare response to emergencies and disasters. During the response process, gaps, strengths, and weaknesses are identified, and these should inform the plan review process. Health disaster management plans should be reviewed, revised, and updated regularly.

The results of this study indicated that the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management* was effective, and that the government of Jamaica should continue to use the document. The results also suggested that the plan review process should be enhanced. In addition, the study confirmed that the plan was necessary for the Jamaica healthcare sector.

This study explored perspectives of healthcare workers in Jamaica about the effectiveness of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management.* The healthcare workers provided candid responses which informed this report. However, I recommend further research on this subject to add to the body of knowledge on perceptions of healthcare workers about Jamaica's health disaster management plan.

The perspectives of healthcare workers in Jamaica about the *Ministry of Health Procedures Manual No. 7, Disaster Management,* recorded in this study can influence policy makers in Jamaica to pursue strategies to enhance the document. A strengthened health disaster management plan will improve the capabilities of healthcare workers in Jamaica for response to health emergencies and disasters. This will expand the possibilities for improvements in emergency healthcare services for the population of Jamaica, therefore resulting in positive social change.

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Appendix A: Interview Protocol

Introduction

Hello, and thank you very much for agreeing to participate in this study. My name is Terence Walters and I am a student at Walden University. I am currently conducting research toward the completion of the PhD in Public Policy and Administration. Welcome to the interview.

The purpose of this interview is to explore perspectives on the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. You have had to use the document in your line of work to respond to emergencies and disasters and therefore you meet the criteria for participation. Your responses will be valuable to this study. Please be reminded that your participation is completely voluntary. You have already given consent to participate in the study by the email you submitted to me. Are you still interested in participating in the study?

The audio of this interview will be recorded. The audio will be used for transcribing purposes and will be kept strictly confidential. Please let me know if you have any objection to the audio recording? If you do, I will not record the audio. Additionally, I will be taking some notes as we go along.

You have been selected to participate in this study because you work in the healthcare sector and you have used the *Ministry of Health Procedures Manual No. 7, Disaster Management*. Your responses will provide valuable information that will benefit the Ministry of Health in its efforts to review and revise the manual.

The consent form outlined issues of privacy, anonymity and confidentiality, and I reassure you that these will be maintained. The information you provide will not be made available to anyone without your consent. Additionally, when the data is analyzed, I will ensure that nothing can be traced back to you. No names or anything else that can be traced to you will be used in the final report.

(For face-to-face interviews) You have submitted an email stating that you give consent to participate in this study. I now kindly ask that you place your signature on the consent form.

(For telephone, Skype, WhatsApp interviews). You have submitted an email stating that you give consent to participate in the study. We are doing this interview by electronic means and therefore you cannot sign the consent form. Do you now give formal consent to participate in this study? Additionally, can you place your signature on the consent form, take a photo of it and send it to me by WhatsApp?

The data collected will not be used for any purposes outside of this research and will be kept in a secure password-protected computer folder. This interview should last approximately 30 to 40 minutes. Please be reminded that I will record the audio of the interview and in addition will take notes to ensure validity and reliability of the data collected. If you have any objection to the recording of the audio, please let me know at this time.

Based on all that I have explained, if you feel uncomfortable or for any reason you do not want to participate anymore you are free to withdraw at this time. You are

also free to request that the interview be stopped at any time during the process. Do you have any questions at this time? Thank you.

Please answer the questions to the best of your knowledge. If you do not have an answer it is OK to let me know. Also, if you do not feel comfortable answering any question, please let me know. We can now proceed with the questions.

Date: _____

Interview Number: _____

Name of Interviewee: _____

Name of Interviewer: _____

Location: _____

Please respond to the following questions to the best of your knowledge.

1. Please describe your experience with the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*.

   Probing Question: List some of the emergencies that required your use of the plan.

2. Explain how knowledgeable you were about the contents of the plan when you had to use it.

   Probing Question: Was the knowledge effective for your preparation for an emergency or disaster?

3. Describe how effective you think the plan is in assisting individual healthcare workers to prepare for emergencies/disasters?

   Probing Question: Can you give examples?

4. Describe how effective you believe the plan is in assisting the healthcare workforce to prepare for emergencies/disasters?
5. Explain how the plan is used to prepare healthcare workers to meet the needs of people who seek healthcare services after a disaster?
6. When a disaster occurs, how effective is the plan review process after the event?

   Probing Question: What do you think about the effectiveness of the timeframe within which the review occurs?

7. Describe any positive or negative experiences that you have had with the use of the plan.

   Probing Question: How effective have those experiences been in either encouraging or discouraging your use of the plan in your work?

8. Describe any ways that you think the plan can be enhanced so it can be more effective.
9. Do you think that the government of Jamaica should continue to use the plan?

   Probing Question: Why?

We have come to the end of the interview. Thank you very much for your time and participation and for sharing your perspectives. Your responses were valuable and will provide much needed details for the results of this study. I remind you that your

privacy will be maintained and your responses will be treated with strict confidentiality. If you need to contact me for any matters relating to the study you can do so since you already have my contact details in the consent form.

A copy of the transcript of this interview will be sent to you by email for verification. Please read the document, and suggest any corrections and/or changes you may have. You can send the response by email. Once again, thank you for your participation in the study. Finally, do you have any questions for me at this time?

Appendix B: Alignment of Interview Questions

NO.	Interview question	Research question alignment
1.	Please describe your experience with the use of the Jamaica *Ministry of Health Procedures Manual No. 7, Disaster Management*.	How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?
2.	Explain how knowledgeable you were about the contents of the plan when you had to use it.	How do healthcare workers in Jamaica use the health disaster management plan during emergencies?
3.	Describe how effective you think the plan is in assisting individual healthcare workers to prepare for emergencies/disasters?	How do healthcare workers in Jamaica use the health disaster management plan during emergencies?
4.	Describe how effective you believe the plan is in assisting the healthcare workforce to prepare for emergencies/disasters?	How do healthcare workers in Jamaica use the health disaster management plan during emergencies?
5.	Explain how the plan is used to prepare healthcare workers to meet the needs of people who seek healthcare services after a disaster?	How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?
6.	When a disaster occurs, how effective is the plan review process after the event?	How do healthcare workers in Jamaica perceive revisions to the health disaster management plan following emergencies?
7.	Describe any positive or negative experiences that you have had with the use of the plan.	What experiences have healthcare workers in Jamaica had that will either encourage or discourage their use of the health disaster management plan?
8.	Describe any ways that you think the plan can be enhanced so it can be more effective.	How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?
9.	Do you think that the government of Jamaica should continue to use the plan?	How do healthcare workers in Jamaica perceive the effectiveness of the health disaster management plan?

Appendix C: Screening Protocol

Introduction

Hello, my name is Terence Walters and I am a student at Walden University. I am currently conducting research toward the completion of the PhD in Public Policy and Administration. The research topic is 'The Impact of Hurricanes on the Healthcare Sector in the Caribbean'. The purpose of this interview is to explore perspectives on the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management*. I am currently recruiting participants for the study. However, there are some criteria that participants should fulfil in order to be eligible to be part of the interview. I will like to ask you a few questions which will help us make the decision about your participation in the study.

1. Do you live in Jamaica?
2. How long have you lived in Jamaica?
3. Are you currently or were you employed in the healthcare sector in the last 15 years?
4. As a healthcare worker, have you experienced a hurricane or health emergency in Jamaica in the last 15 years?
5. Have you had to use the *Ministry of Health Procedures Manual No. 7, Disaster Management* in your response?

Note: Prospective participants must answer yes to questions 4 and 5 to be eligible to participate in the study.

Appendix D: Member Checking Correspondence

Dear participant,

Thank you for participating in the research on perceptions of healthcare workers in Jamaica about the effectiveness of the *Ministry of Health Procedures Manual No. 7, Disaster Management.* The information you provided was valuable and added to the body of knowledge on the subject.

I have attached a copy of the transcript of your interview to this email. Please review the document to ensure that it is accurate and reflects your true perspectives. If there are any corrections, additions or areas you wish to delete, please indicate so by sending me an email with the information. The transcript will then be updated accordingly.

Please be reminded that you can request a copy of the findings at the end of the research. A copy of the final report will be made available to the Ministry of Health, Jamaica.

I continue to maintain your anonymity, privacy and confidentiality by not sharing any information that can be traced back to you at any point in this research. There will be nothing to tie you to any information in the final report which will be presented to the Ministry of Health.

I look forward to your review of the transcript and your response.

Thank you

Terence Walters
Student Researcher
Walden University